Sustainable Facilities and Sustainable Operations of Facilities

Mr. Stacey K. Hirata

Ms. Annette Stumpf

Ms. Manette Messenger

What is “Sustainability”?

“Meeting the needs of the present without compromising the ability of future generations to meet their own needs” – United Nations Brondtland Commission

Why is “Sustainability” Important?

Life supporting resources are finite and declining; consumption is increasing

The capacity to continue an activity perpetually or until the assigned mission is complete

Consider the triple bottomline: Social; Economic; and Environmental

Installation Sustainability

"Installation Sustainability moves us beyond simply solving today's problems. A sustainable Army is one that wins today's battles while laying the foundation for our future success. It connects today to tomorrow with sound business and environmental practices… Sustainability enables today's Army to empower the Future Force."

Dr. Mario P. Fiori
Assistant Secretary of the Army

Agenda

- Fort Future Overview Annette Stumpf
  - Fort Future Tools
  - Focus on “SPiRiT”
- Examples of Implementing Sustainability Concepts on Installations

  Manette Messenger

Contact Information

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Sustainable Installation Modeling Using Fort Future
&
Sustainable Design Using SPiRiT

ARMY DPW WORLDWIDE TRAINING WORKSHOP

Washington DC 1-4 December 2003

Annette Stumpf

U. S. Army Corps of Engineers

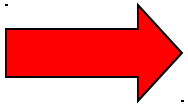
Engineer Research & Development Center

FORT FUTURE Tools: Sustainable Installation Modeling

STO # IV.EN.2002.02

Dr. Michael Case – Special Project Officer

Outline



- Introduction
- Sustainable Installations
- Fort Future Scope
- Fort Future Planning Study Walkthrough
- Sustainable Design Using SPiRiT

What is Fort Future?

Fort Future is a web-based, collaborative, decision support tool that helps users to conduct analysis of alternatives using modeling and simulation

To find out more about Fort Future, please visit our website at http://ff.cecer.army.mil

Fort Future addresses:

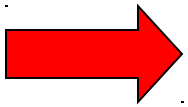
- Facility Charrettes
- Deployment Simulation
- Utility Modeling
  - Electrical Power
  - Water
- Force Protection/Anti-terrorism
- Encroachment on Training Lands and Ranges

It is also a platform for integrating future simulations

Product

- Inputs
  - Human judgment
  - GIS
  - STAMIS (IFS, ISR, RPLANS, etc)
- Outputs
  - Analysis Documents
  - Visualizations

Outline



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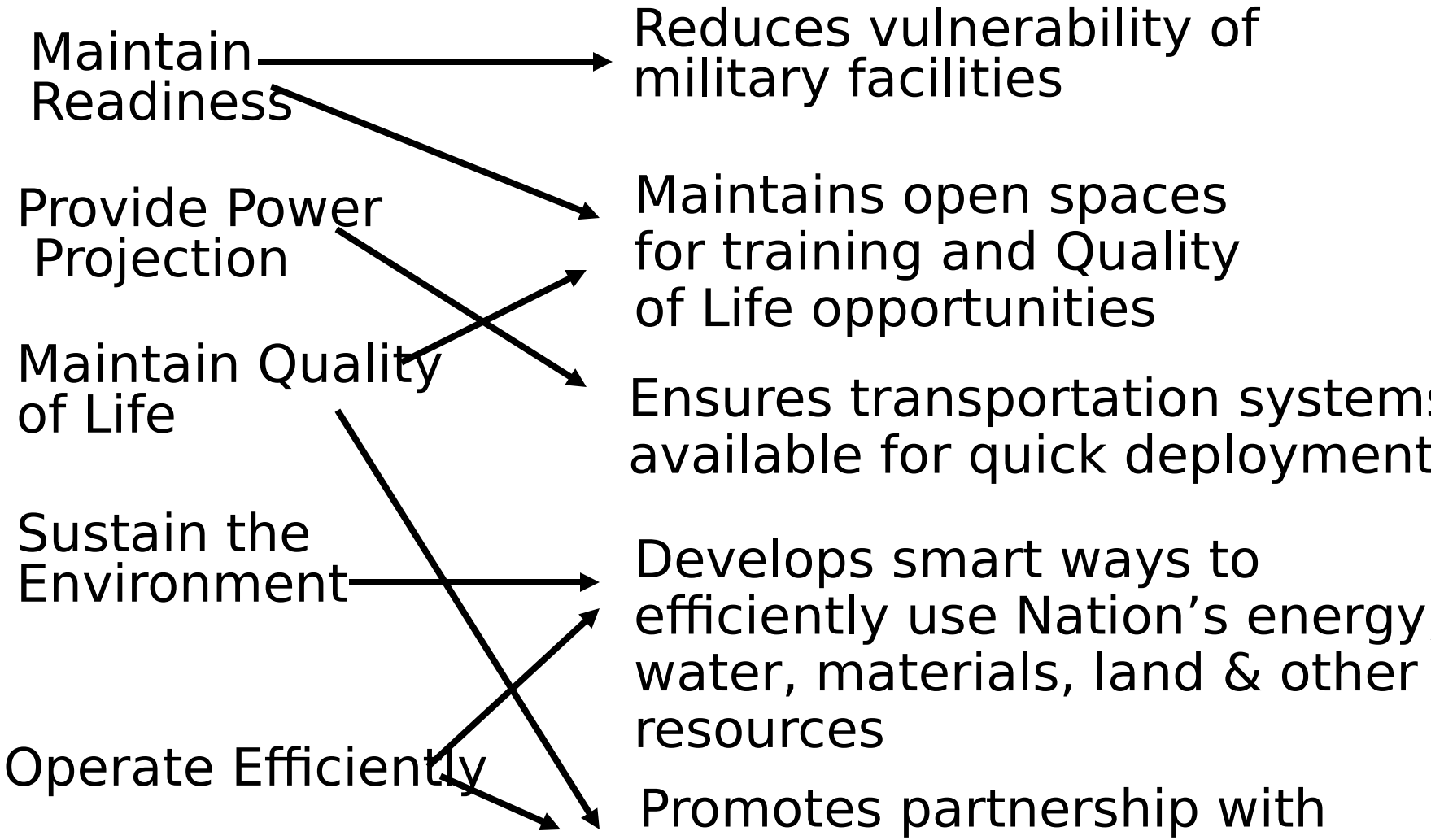
What is a Sustainable Installation?

To maintain readiness, the modern Army installation requires:

- **Thousands of acres of undamaged training lands**
- **Secure, plentiful source of drinking water**
- **Affordable energy to power buildings and vehicles**
- **Resources to build / renovate infrastructure & facilities, sustain troops & families, and conduct mission / business**

A Sustainable Installation is an installation that plans pro-actively for these issues to

Sustainability: a bridge to meeting Installation challenges


Maintain Readiness
Provide Power Projection
Maintain Quality of Life
Sustain the Environment
Operate Efficiently
Reduces vulnerability of military facilities
Maintains open spaces for training and Quality of Life opportunities
Ensures transportation systems available for quick deployment
Develops smart ways to efficiently use Nation's energy, water, materials, land & other resources
Promotes partnership with local communities

The Army Model

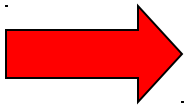
- It means sustaining

FOUR PRINCIPLES OF SUSTAINABILITY

- You can’t dig stuff out of the Earth and spread it around indefinitely (Oil and Coal)
- You can’t spread human-created stuff around in Nature indefinitely (Solvents, POL)
- Don’t erode Nature’s capacity to do all the wonderful things Nature does (Water and wind erosion)
- Do business efficiently and make sure that everyone has enough

Adopted from the Natural Step….

Outline



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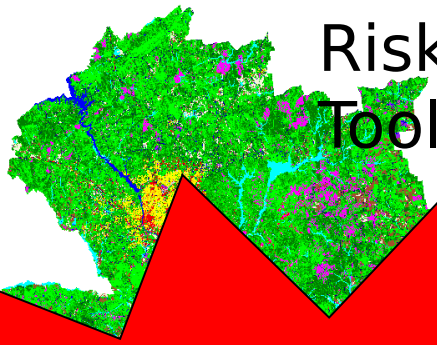
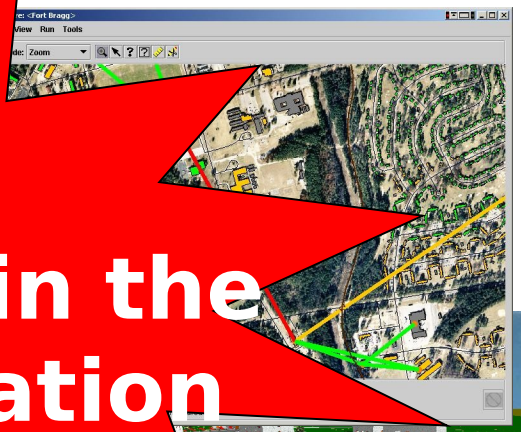
Fort Future Tools for Complex, Integrated Analysis

Risk and Encroachment Tools

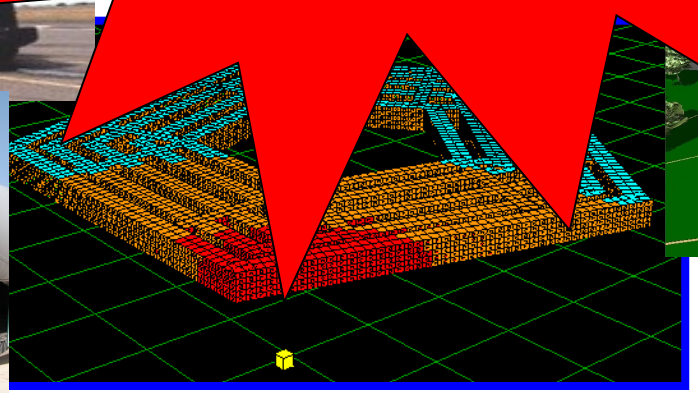
Power Projection Planner

Utilities





What if?
Study options in the Virtual Installation

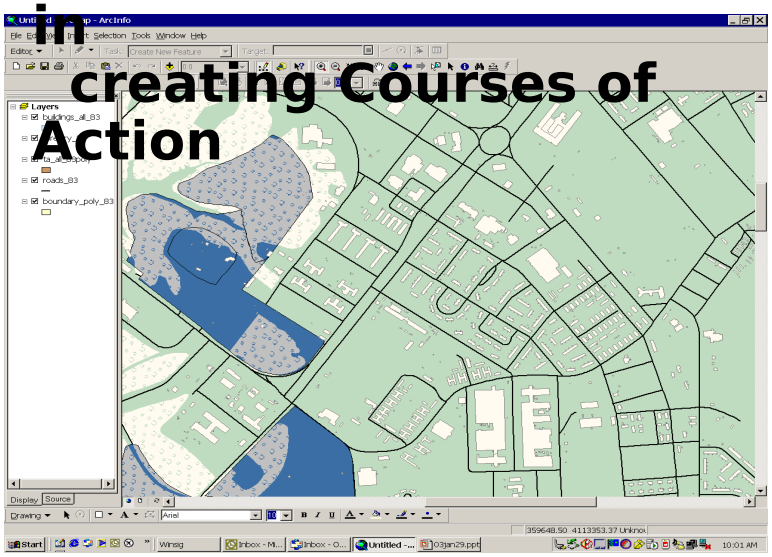


Facility Composer

Force Protection Tools

Integrated Decision Sup

- Decision tool is the integrator
- METL tool captures mission requirements
- Stakeholders participate in creating Courses of Action



- Run analyses across functional areas
- Visualize outcomes

Requirement: Balance multiple mission needs for the lo

Power Projection Planner

- **Model Deployment Processes**
- **Assess ability of infrastructure to support deployment**
- **Explore infrastructure option**
  - **Time**
  - **Cost**
  - **Risk**
- **Single or multiple installations**

Requirement: Risk-based approach to investme

Facility Composer

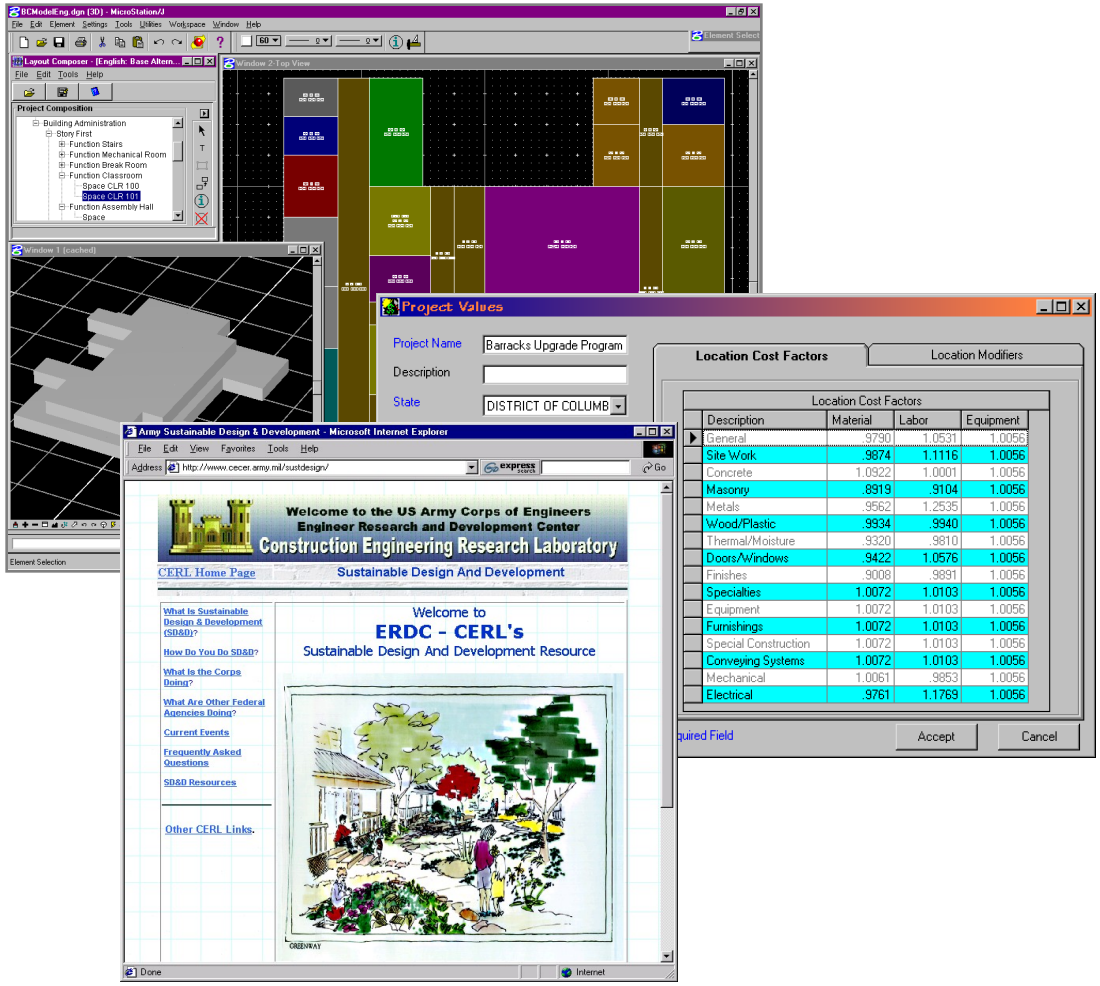
- **Capture and appl**

  Unit Set Fielding criteria and requirements

- **Rapidly estimate design and cost**

- **Design sustainable Facilities**

- **Incorporate Lessons-learned**

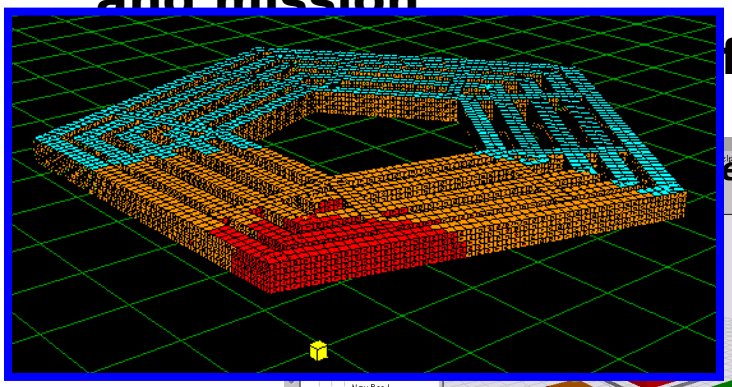


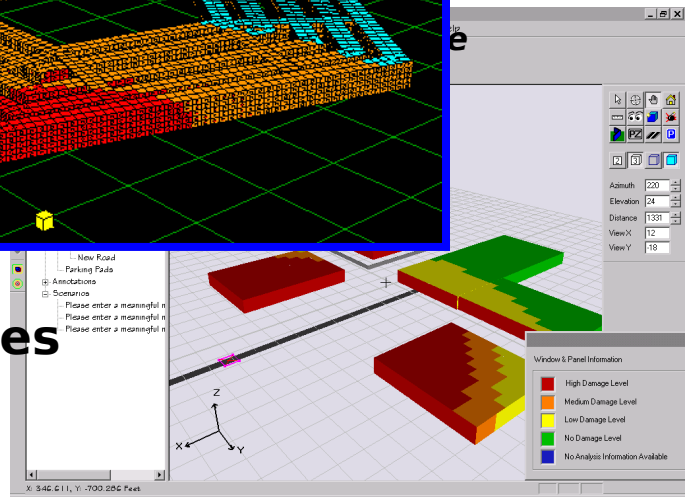
Requirement: Assure facilities ready for OF fie

Force Protection Tools

- **Determine infrastructure vulnerability to blast or CBR attack**
- **Assess impact of attack on human life and mission**

facilities

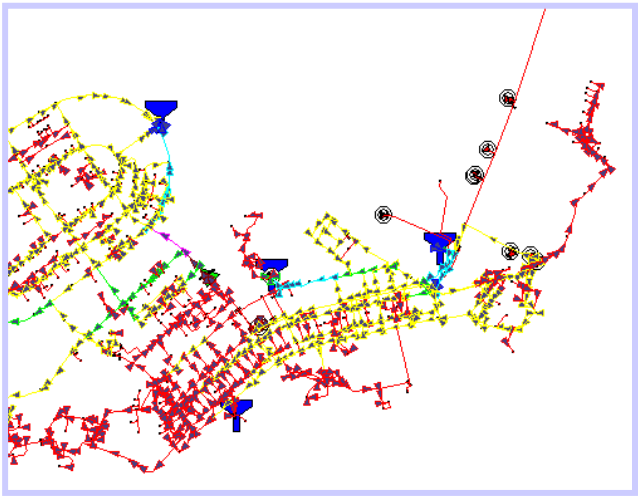




Facilities

Dispersion model from DTRA

Airborne CBR attack

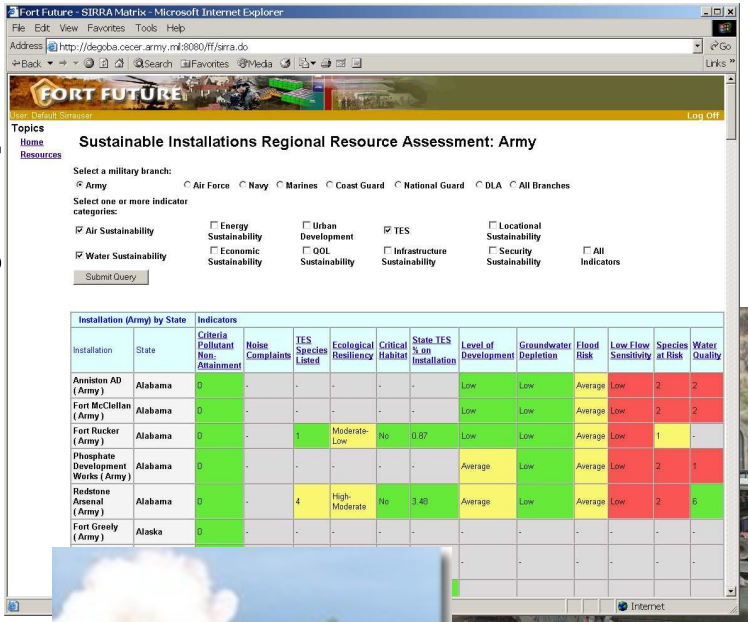


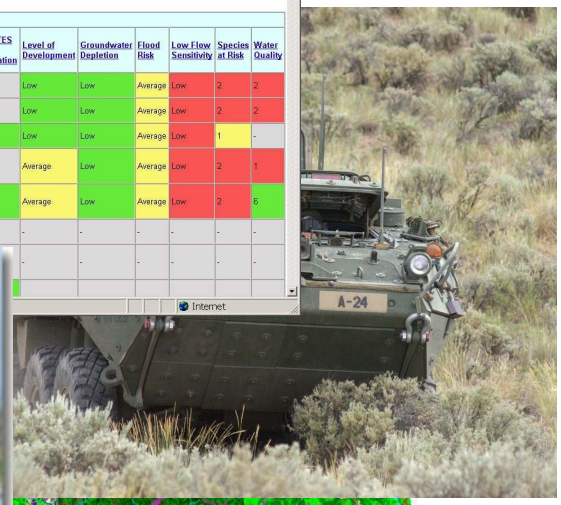
Water system CBR attack

Requirement: Meet new security threats

Risk & Encroachment Tools

- **National Risk Assessment**
- **Analyze encroachment ris**
  - **Frequency**
  - **Noise**
  - **Dust, smokes, & obscurants**
  - **Endangered species**
- **Detect impact on historic and cultural resource**





Requirement: Maximize Training Opportunities

Outline

- Introduction
- Sustainable Installations
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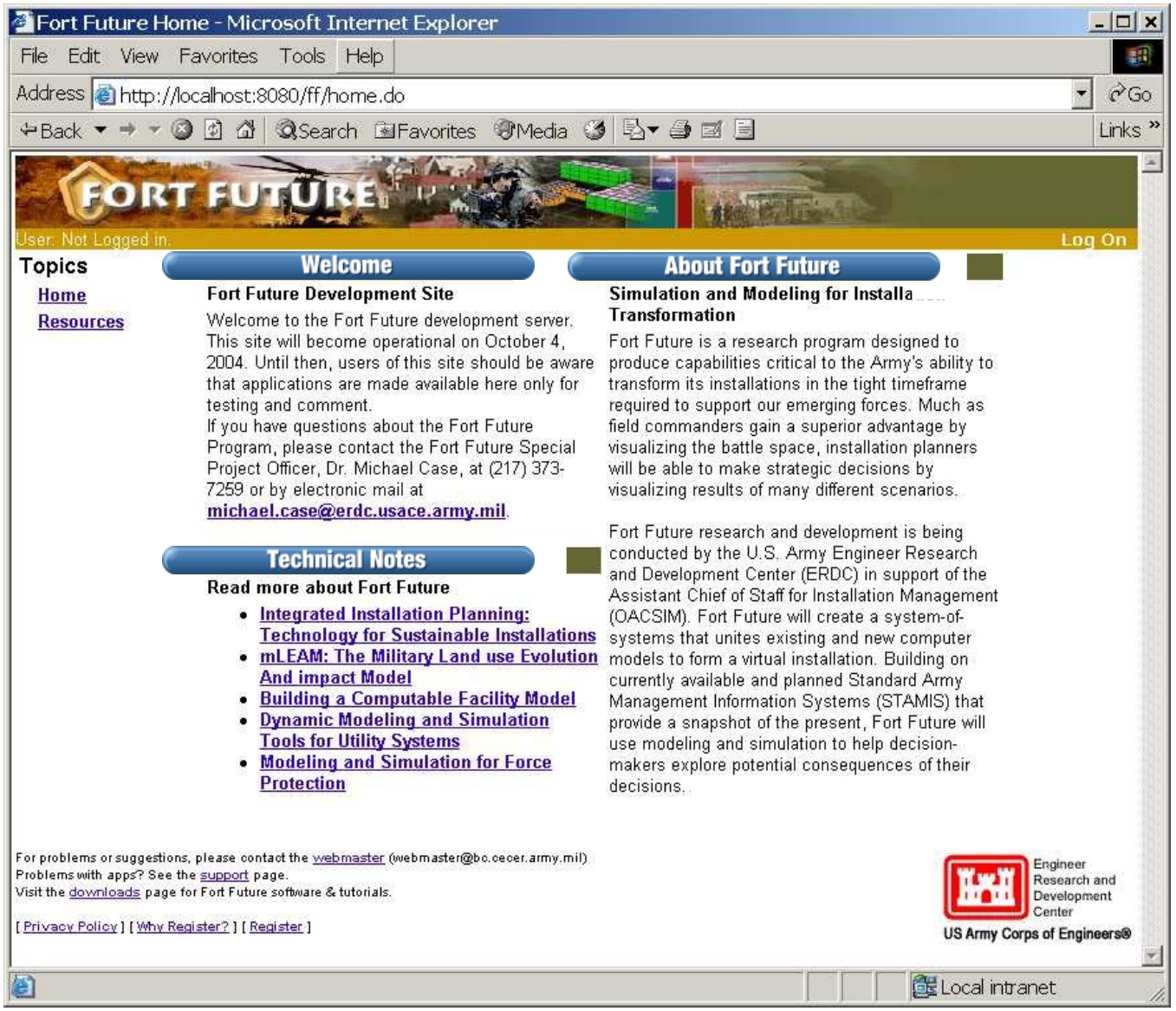
Home Page


Fort Future Home - Microsoft Internet Explorer
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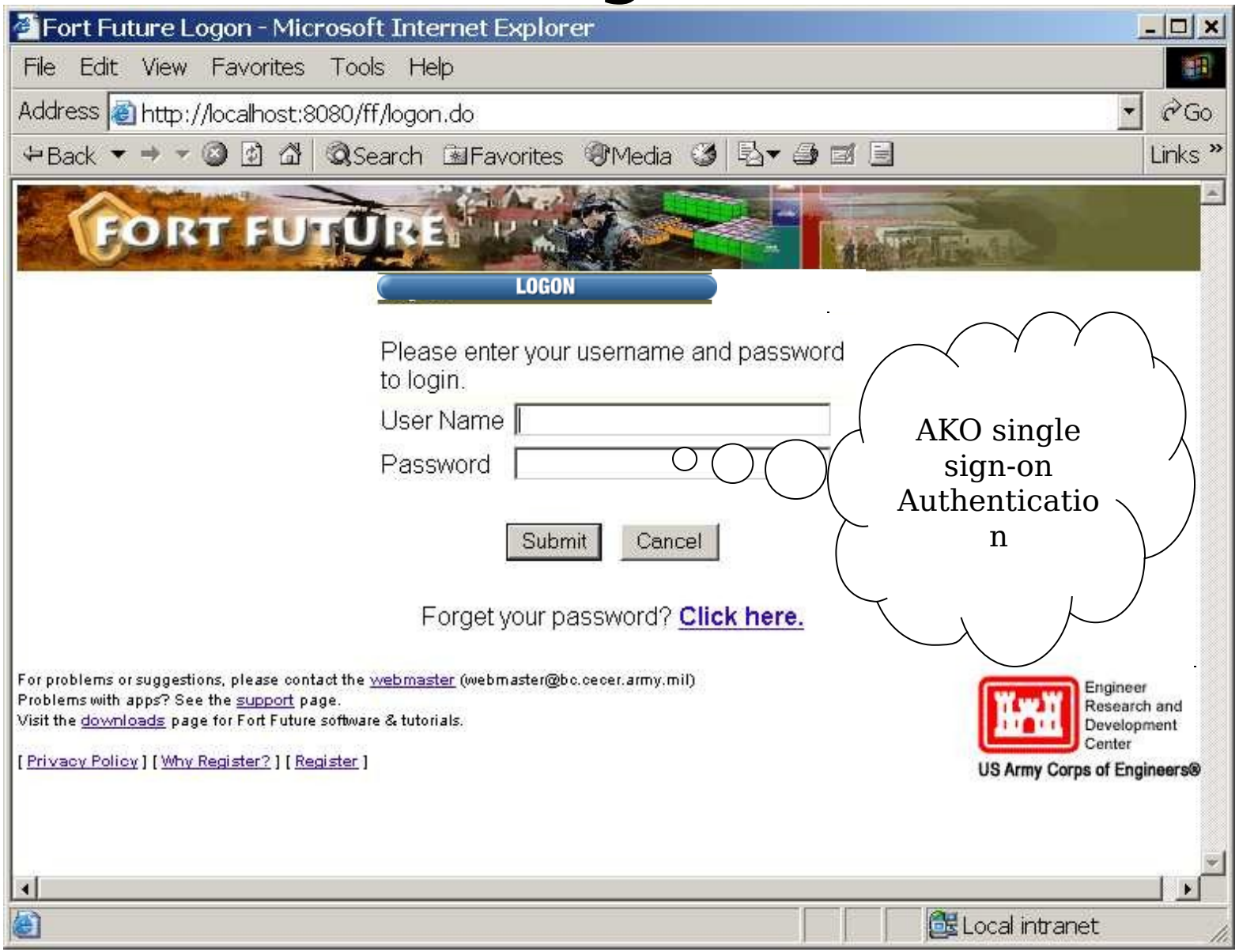
Address http://localhost:8080/ff/home.do
Back Search Favorites Media Links
FORT FUTURE
User: Not Logged in.
Log On
Topics
Home
Resources
Welcome
Fort Future Development Site
Welcome to the Fort Future development server. This site will become operational on October 4, 2004. Until then, users of this site should be aware that applications are made available here only for testing and comment.
If you have questions about the Fort Future Program, please contact the Fort Future Special Project Officer, Dr. Michael Case, at (217) 373-7259 or by electronic mail at michael.case@erdc.usace.army.mil.
About Fort Future
Simulation and Modeling for Installa... Transformation
Fort Future is a research program designed to produce capabilities critical to the Army's ability to transform its installations in the tight timeframe required to support our emerging forces. Much as field commanders gain a superior advantage by visualizing the battle space, installation planners will be able to make strategic decisions by visualizing results of many different scenarios.
Fort Future research and development is being conducted by the U.S. Army Engineer Research and Development Center (ERDC) in support of the Assistant Chief of Staff for Installation Management (OACSIM). Fort Future will create a system-of-systems that unites existing and new computer models to form a virtual installation. Building on currently available and planned Standard Army Management Information Systems (STAMIS) that provide a snapshot of the present, Fort Future will use modeling and simulation to help decision-makers explore potential consequences of their decisions.
Technical Notes
Read more about Fort Future
Integrated Installation Planning: Technology for Sustainable Installations
mLEAM: The Military Land use Evolution And impact Model
Building a Computable Facility Model
Dynamic Modeling and Simulation Tools for Utility Systems
Modeling and Simulation for Force Protection
For problems or suggestions, please contact the webmaster (webmaster@bc.cecer.army.mil)
Problems with apps? See the support page.
Visit the downloads page for Fort Future software & tutorials.
[Privacy Policy] [Why Register?] [Register]
Engineer Research and Development Center
US Army Corps of Engineers®
Local intranet

Logon


Fort Future Logon - Microsoft Internet Explorer
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Address http://localhost:8080/ff/logon.do
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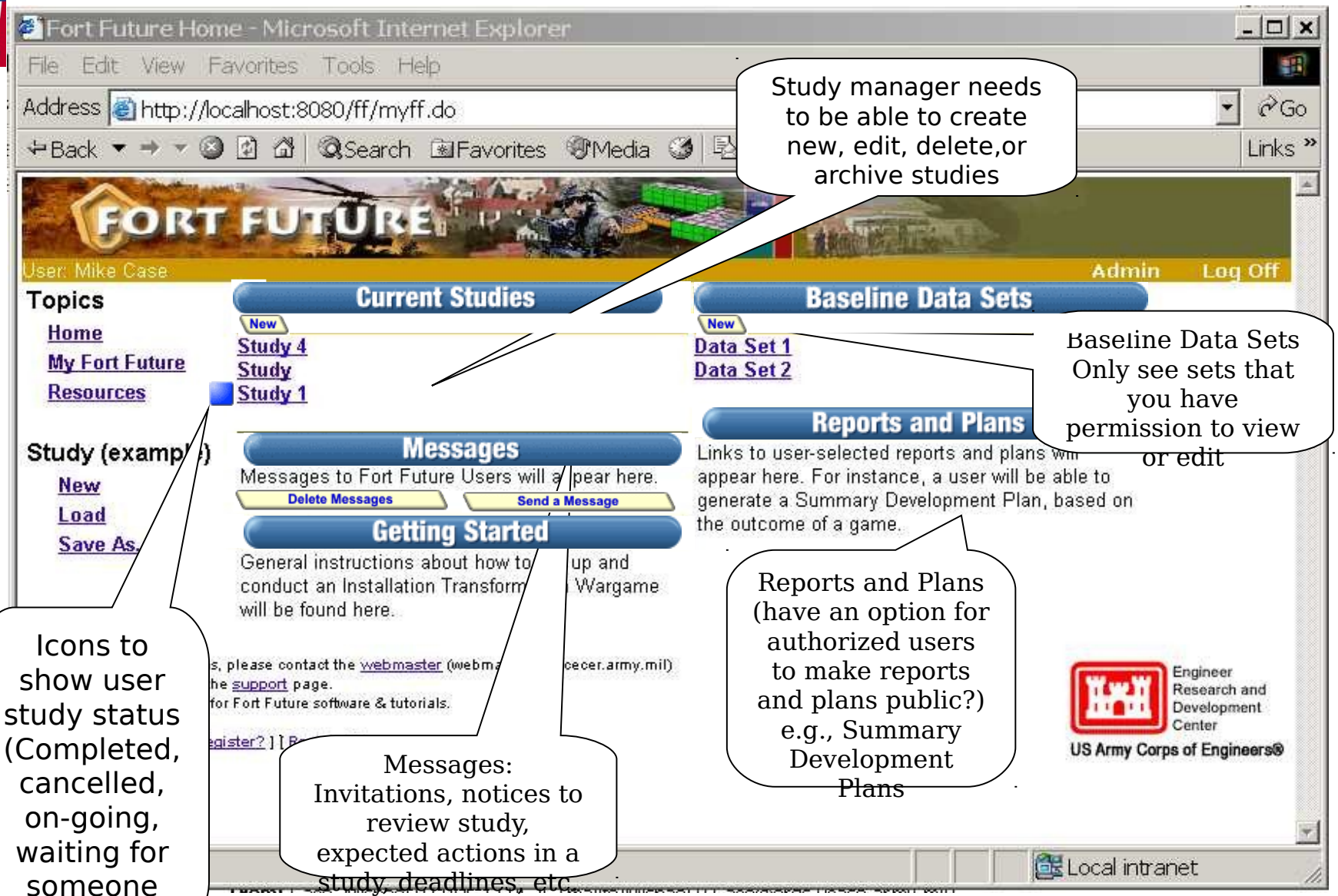
Back Search Favorites Media Links
FORT FUTURE
LOGON
Please enter your username and password to login.
User Name
Password
Submit
Cancel
Forget your password? Click here.
AKO single sign-on Authentication
For problems or suggestions, please contact the webmaster (webmaster@bc.cecer.army.mil)
Problems with apps? See the support page.
Visit the downloads page for Fort Future software & tutorials.
[Privacy Policy] [Why Register?] [Register]
Engineer Research and Development Center
US Army Corps of Engineers®
Local intranet

MyFF



Study manager needs to be able to create new, edit, delete,or archive studies

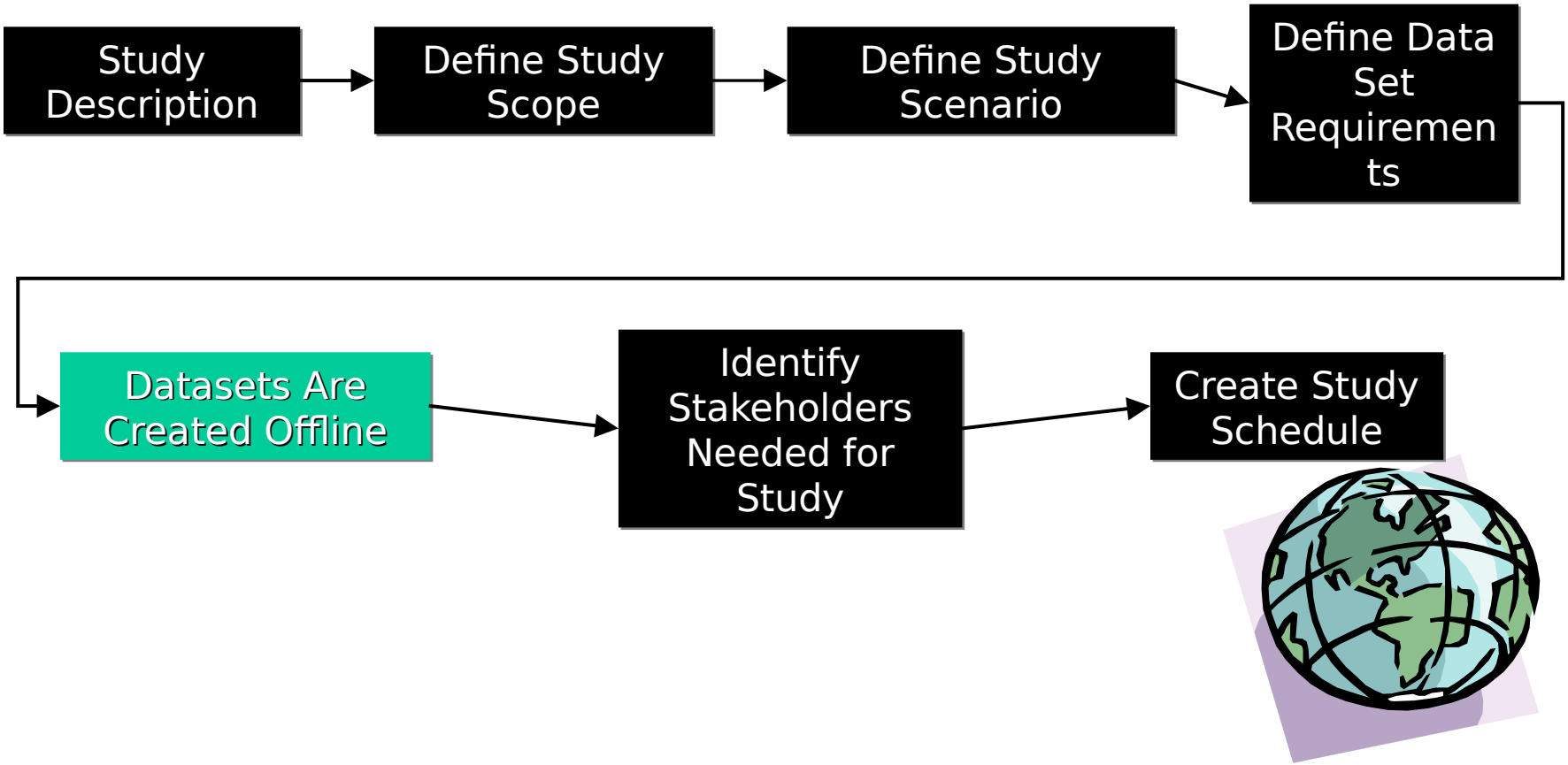
Baseline Data Sets Only see sets that you have permission to view or edit

Reports and Plans (have an option for authorized users to make reports and plans public?) e.g., Summary Development Plans

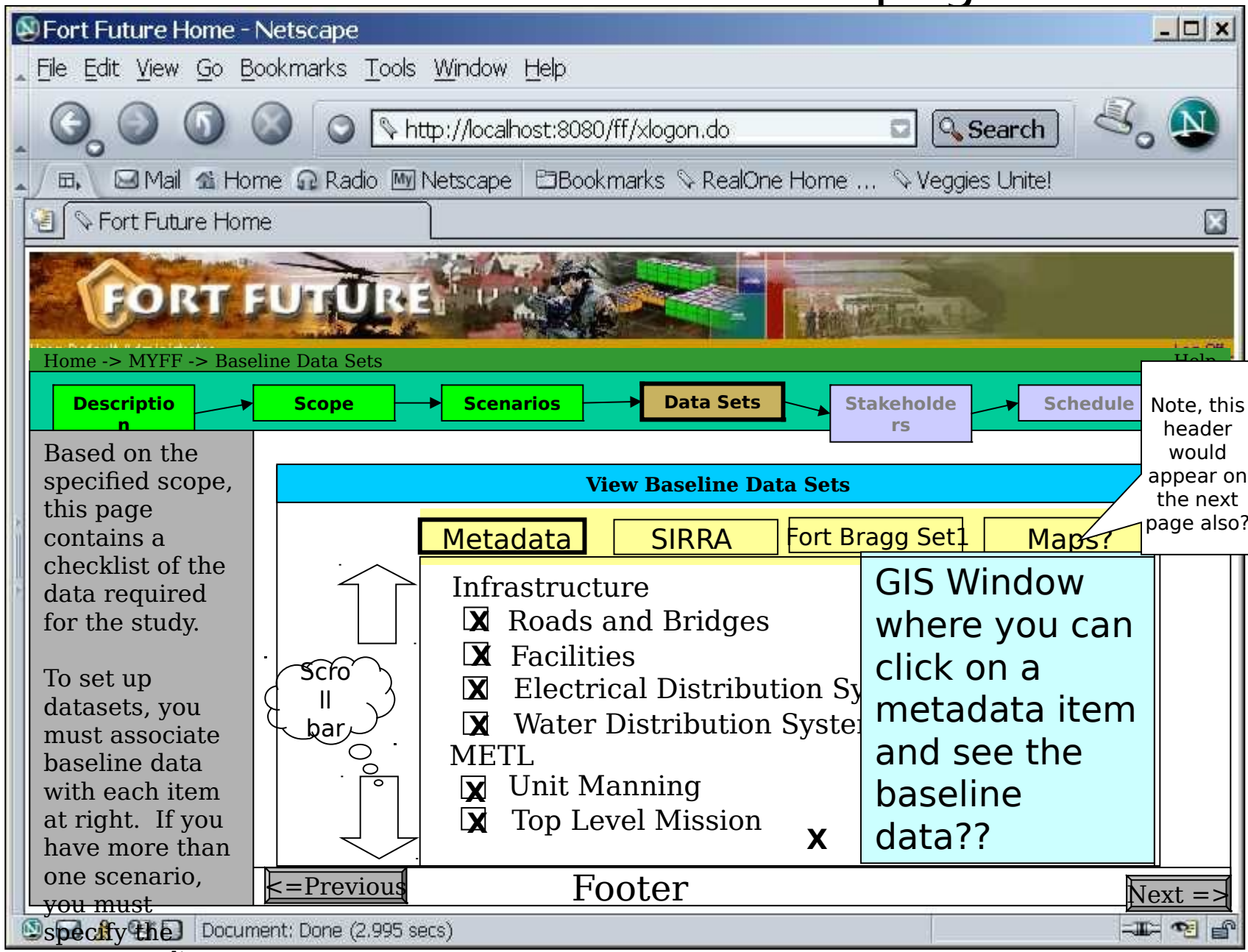
Messages: Invitations, notices to review study, expected actions in a study, deadlines, etc.

Icons to show user study status (Completed, cancelled, on-going, waiting for someone else, Urgent Your turn!

First, we SETUP the FF study, including the Baseline Data for the Virtual Installation



Baseline Data Set Viewer page


Fort Future Home - Netscape
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http://localhost:8080/ff/xlogon.do
Search
Mail Home Radio Netscape Bookmarks RealOne Home ... Veggies Unite!
Fort Future Home
FORT FUTURE
Home -> MYFF -> Baseline Data Sets
Description
Scope
Scenarios
Data Sets
Stakeholders
Schedule
Note, this header would appear on the next page also?
Based on the specified scope, this page contains a checklist of the data required for the study.
To set up datasets, you must associate baseline data with each item at right. If you have more than one scenario, you must specify the corresponding
View Baseline Data Sets
Metadata
SIRRA
Fort Bragg Set1
Maps?
Infrastructure
Roads and Bridges
Facilities
Electrical Distribution Sy
Water Distribution Syste
METL
Unit Manning
Top Level Mission
x
Scroll bar
GIS Window where you can click on a metadata item and see the baseline data??
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Footer
Next =>
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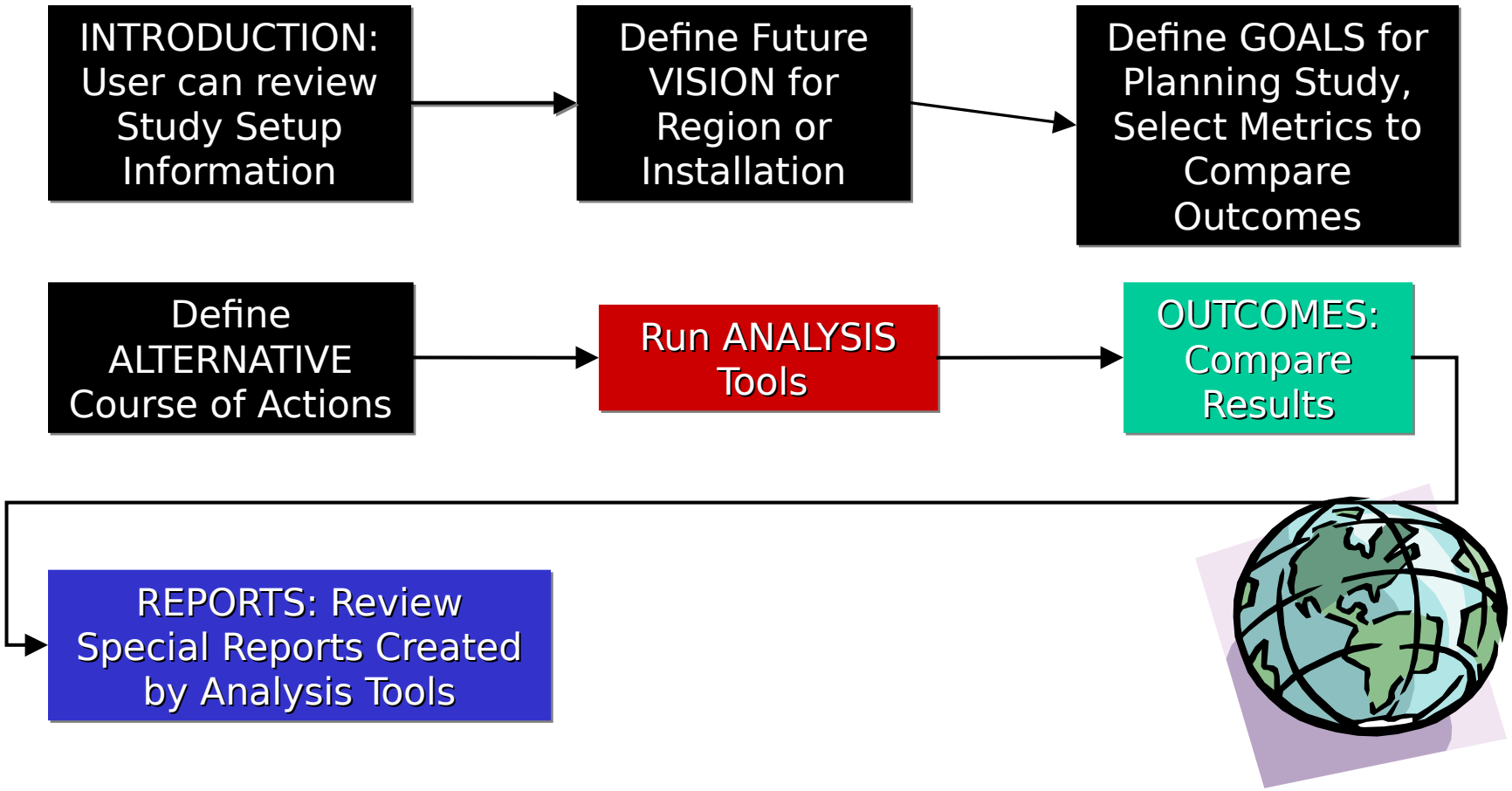
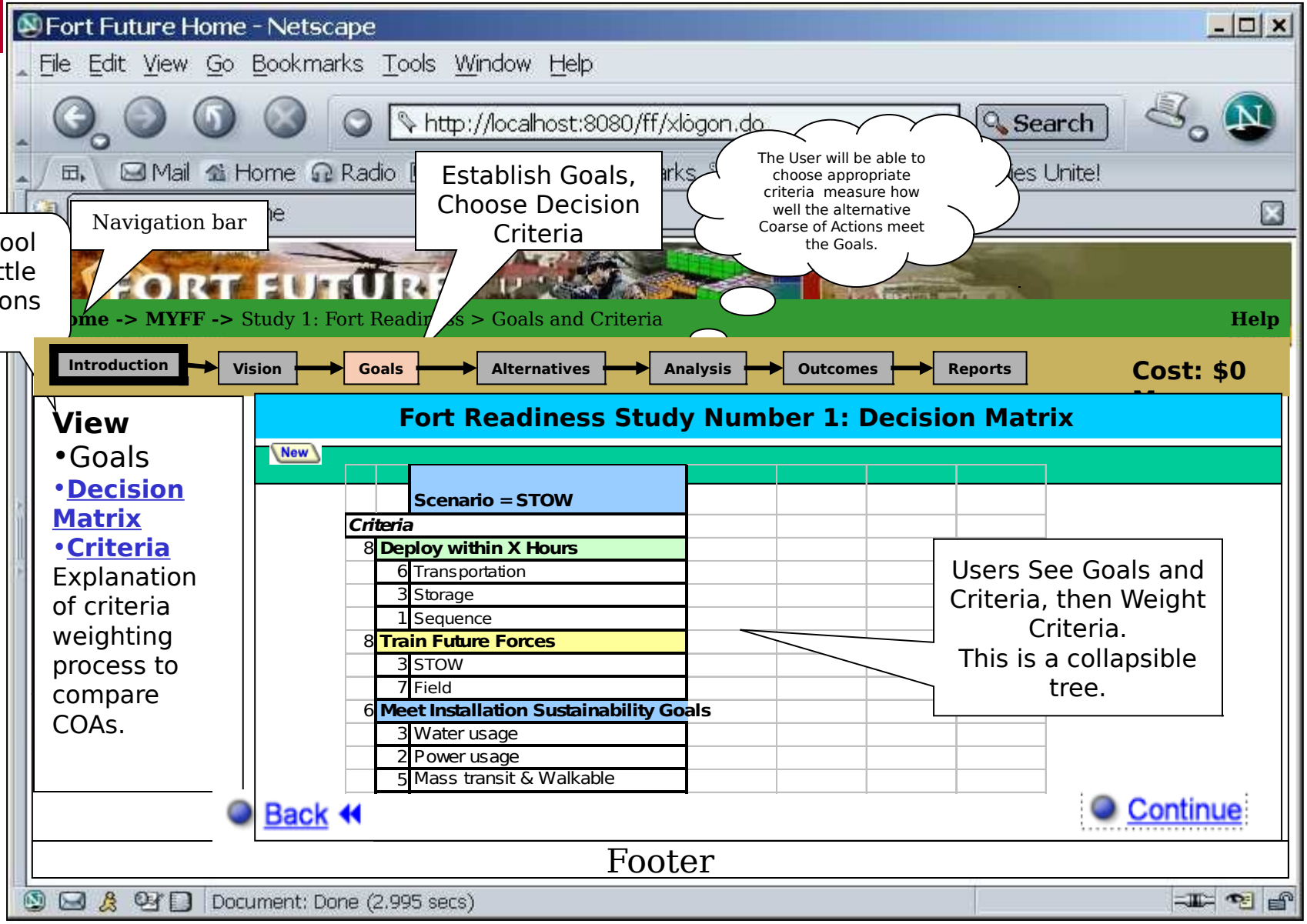
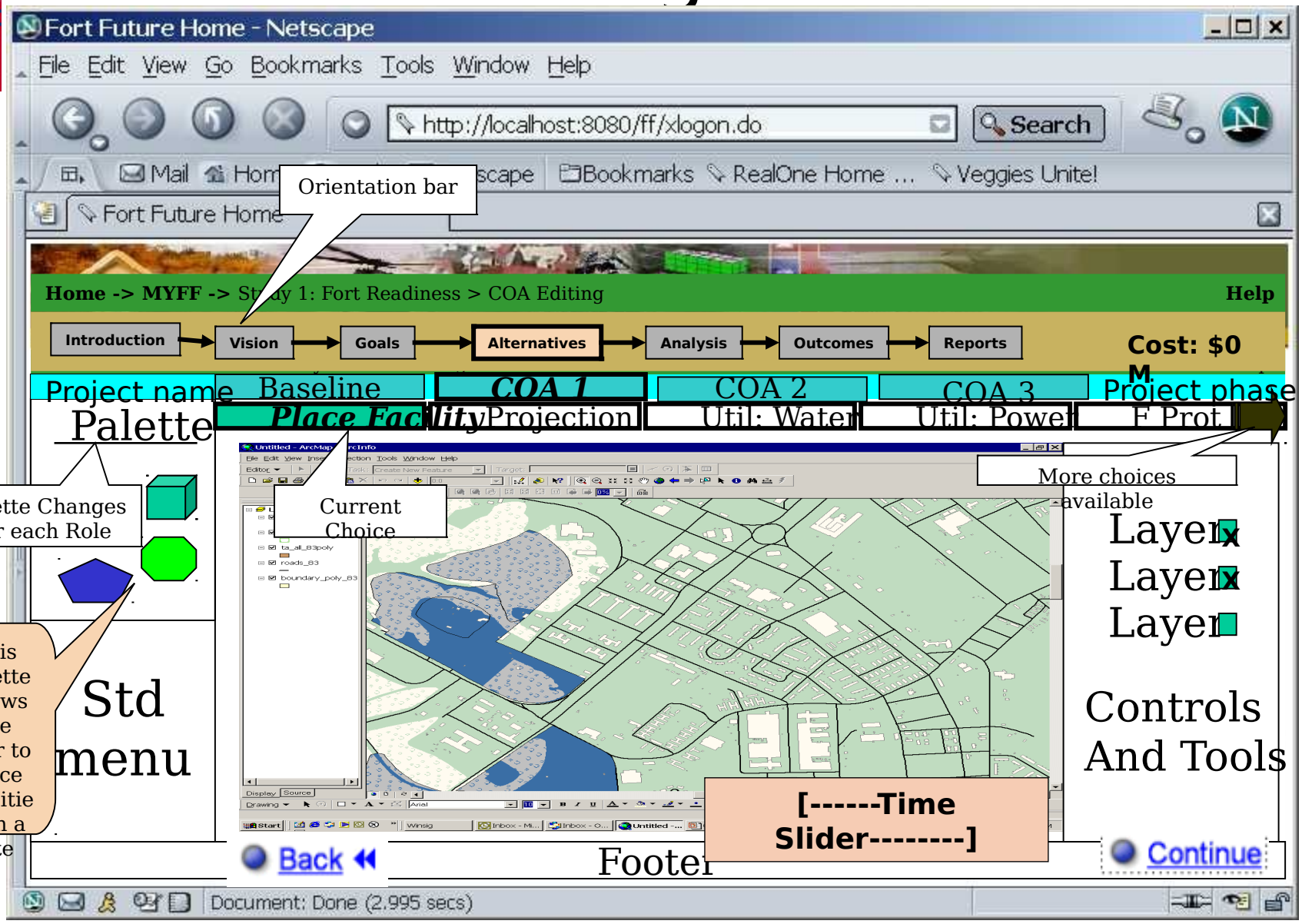
Process for a Installation Planning Study at an Installation


INTRODUCTION: User can review Study Setup Information
Define Future VISION for Region or Installation
Define GOALS for Planning Study, Select Metrics to Compare Outcomes
Define ALTERNATIVE Course of Actions
Run ANALYSIS Tools
OUTCOMES: Compare Results
REPORTS: Review Special Reports Created by Analysis Tools

Study Decision Criteria



COA Editing Screen



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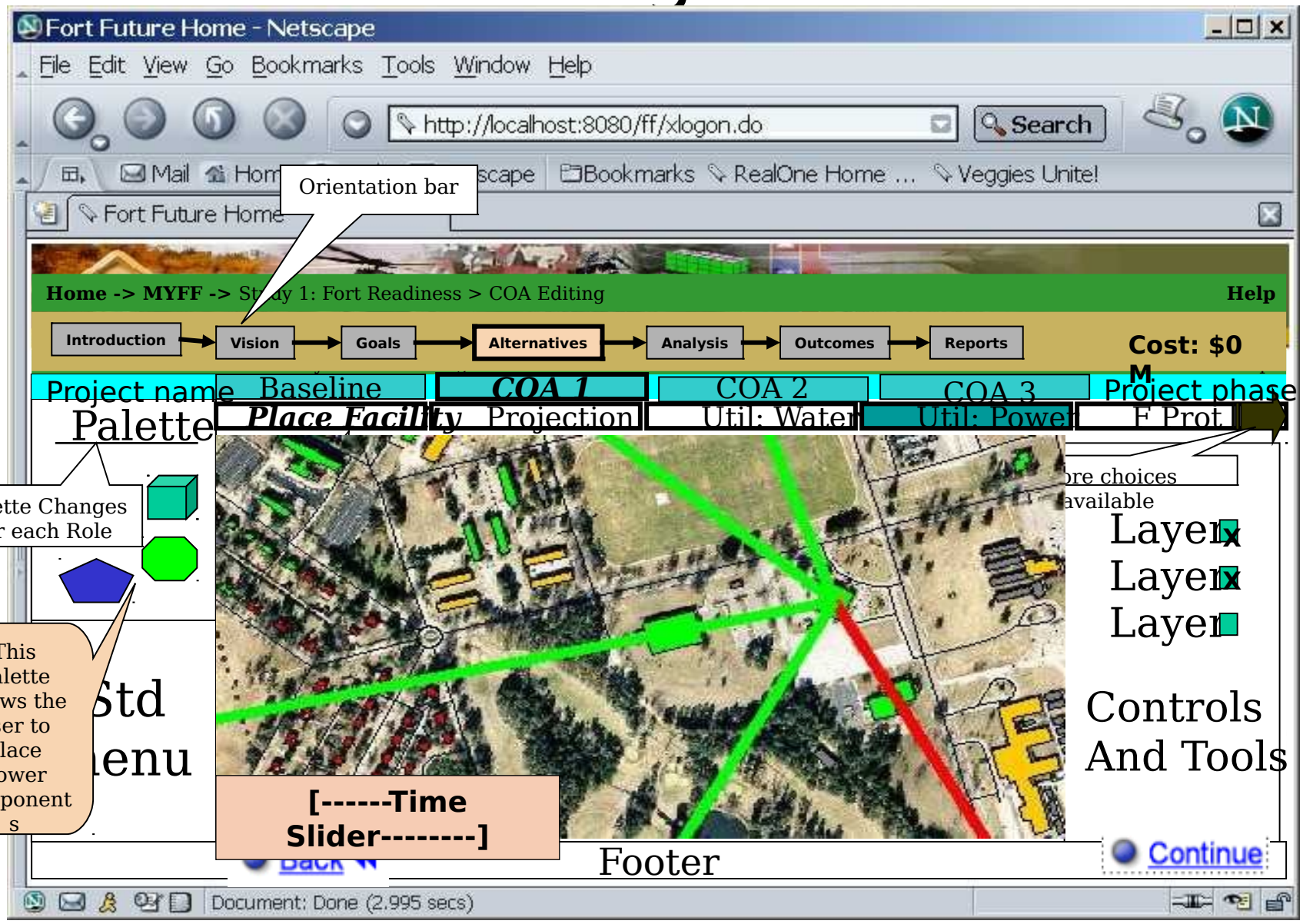
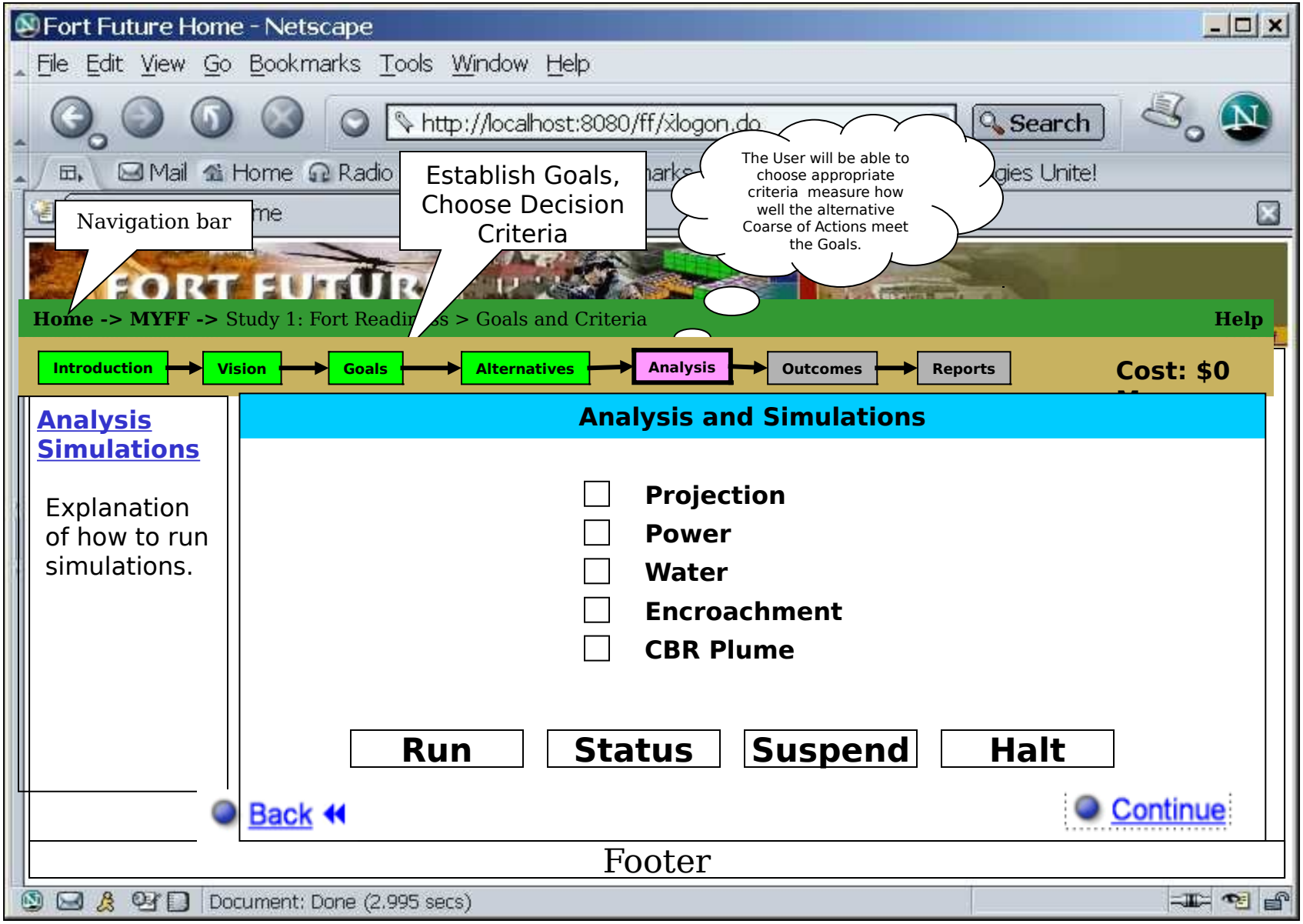


Analysis


Fort Future Home - Netscape
File Edit View Go Bookmarks Tools Window Help
http://localhost:8080/ff/xlogon.do
Search
Mail Home Radio
Navigation bar
Establish Goals, Choose Decision Criteria
The User will be able to choose appropriate criteria measure how well the alternative Coarse of Actions meet the Goals.
Home -> MYFF -> Study 1: Fort Readi ss > Goals and Criteria
Help
Introduction
Vision
Goals
Alternatives
Analysis
Outcomes
Reports
Cost: $0
Analysis Simulations
Explanation of how to run simulations.
Analysis and Simulations
Projection
Power
Water
Encroachment
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Status
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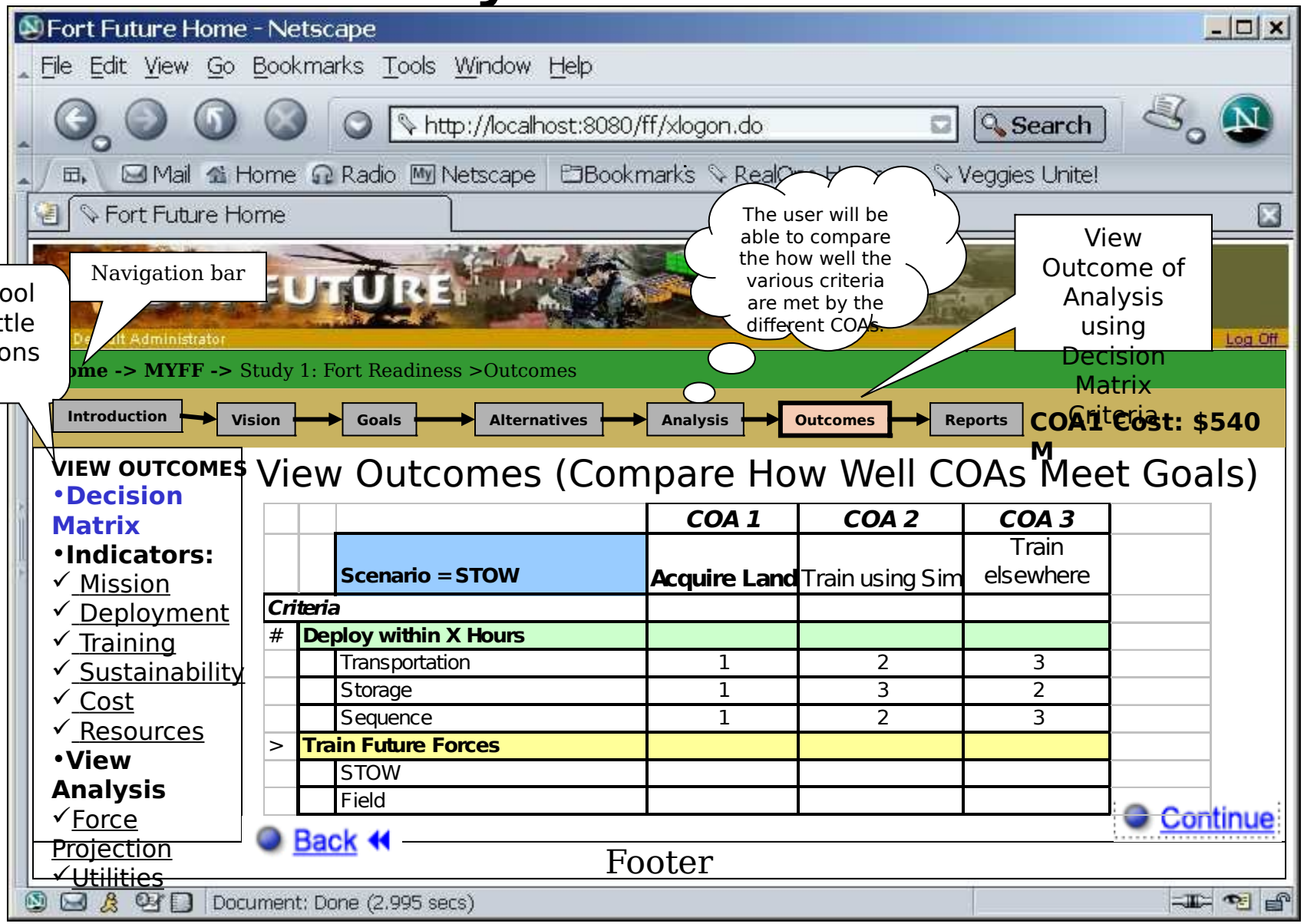
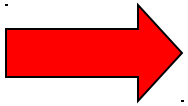
Study Outcome



		COA 1	COA 2	COA 3
	Scenario = STOW	Acquire Land	Train using Sim	Train elsewhere
Criteria				
#	**Deploy within X Hours**			
	Transportation	1	2	3
	Storage	1	3	2
	Sequence	1	2	3
>	**Train Future Forces**			
	STOW			
	Field			

Outline

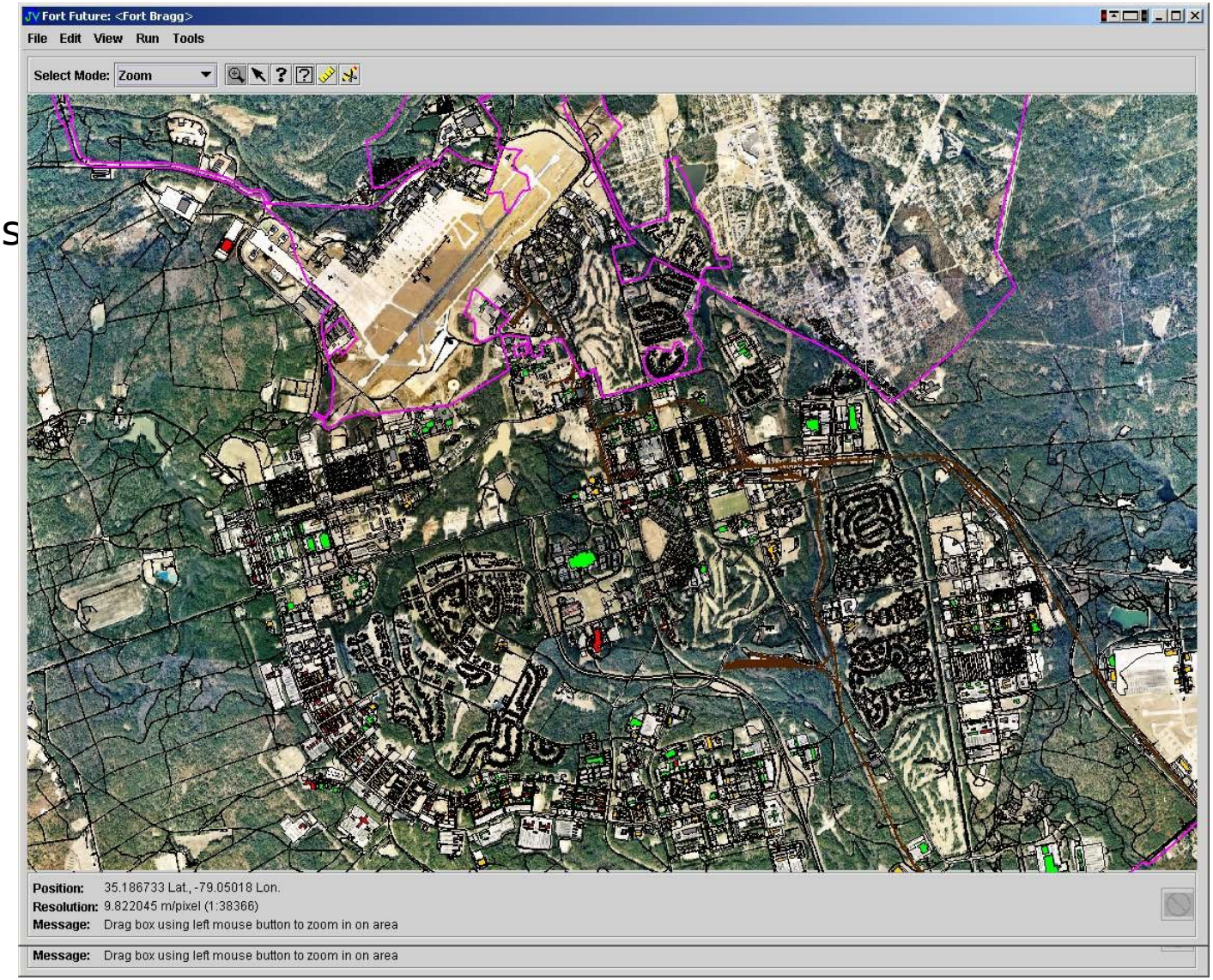
- Introduction
- Scope
- System Design
- Schedule
- Planning Study Walkthrough
- Prototypes



Virtual Installation

Variety of Layers for Visualization and Simulation

- Aerial Images
- Boundaries
- Rail
- Roads
- Facilities
- Utilities, etc.


JV Fort Future: <Fort Bragg>
File Edit View Run Tools
Select Mode: Zoom
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Message: Drag box using left mouse button to zoom in on area
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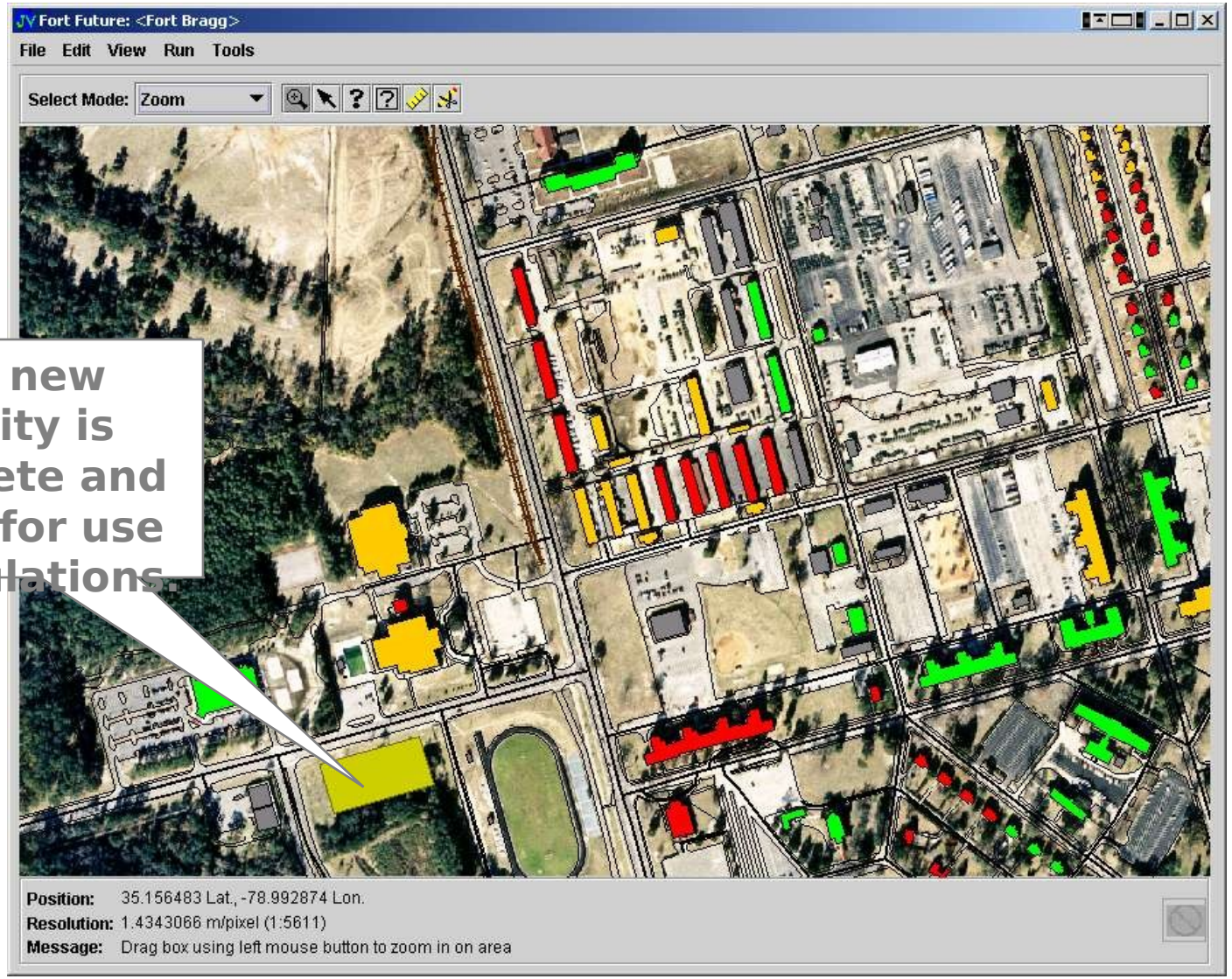
Virtual Installation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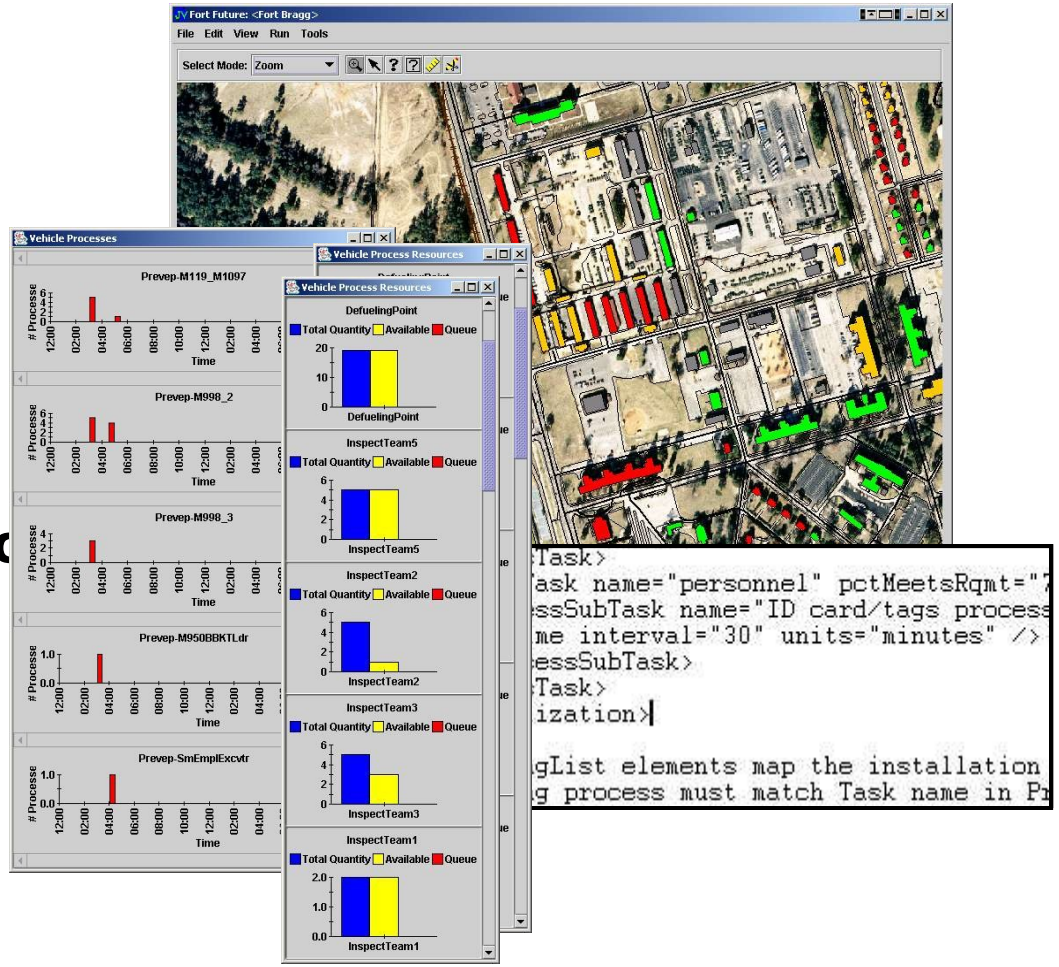
The new facility is complete and ready for use in simulations.

Force Projection

Force Projection Simulation

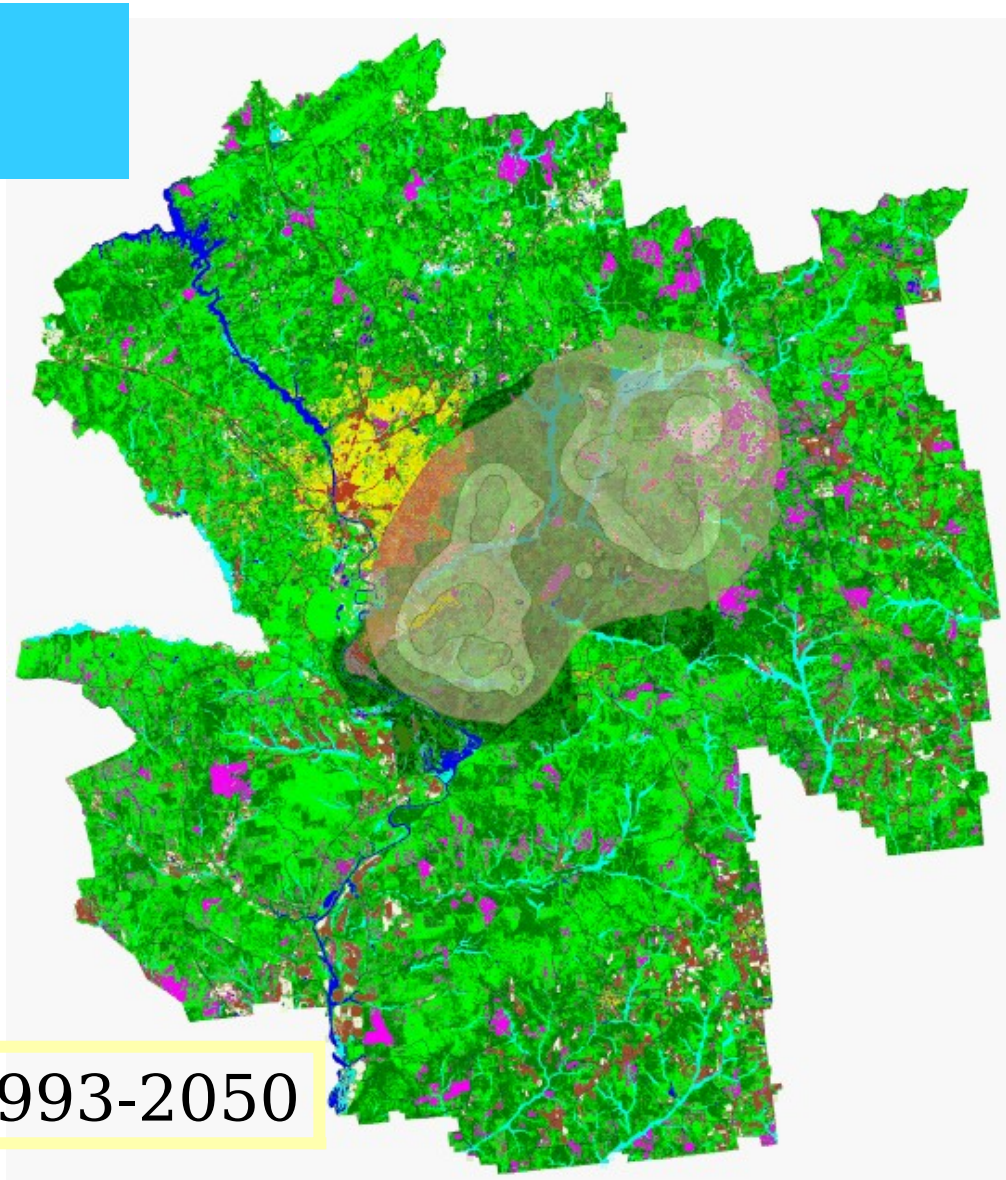
- Charts
  - Resource utilization
  - Process completion
- Text output of simulatio what the agents in the simulation are doing
- Facility status monitor



Future Land Change Projections

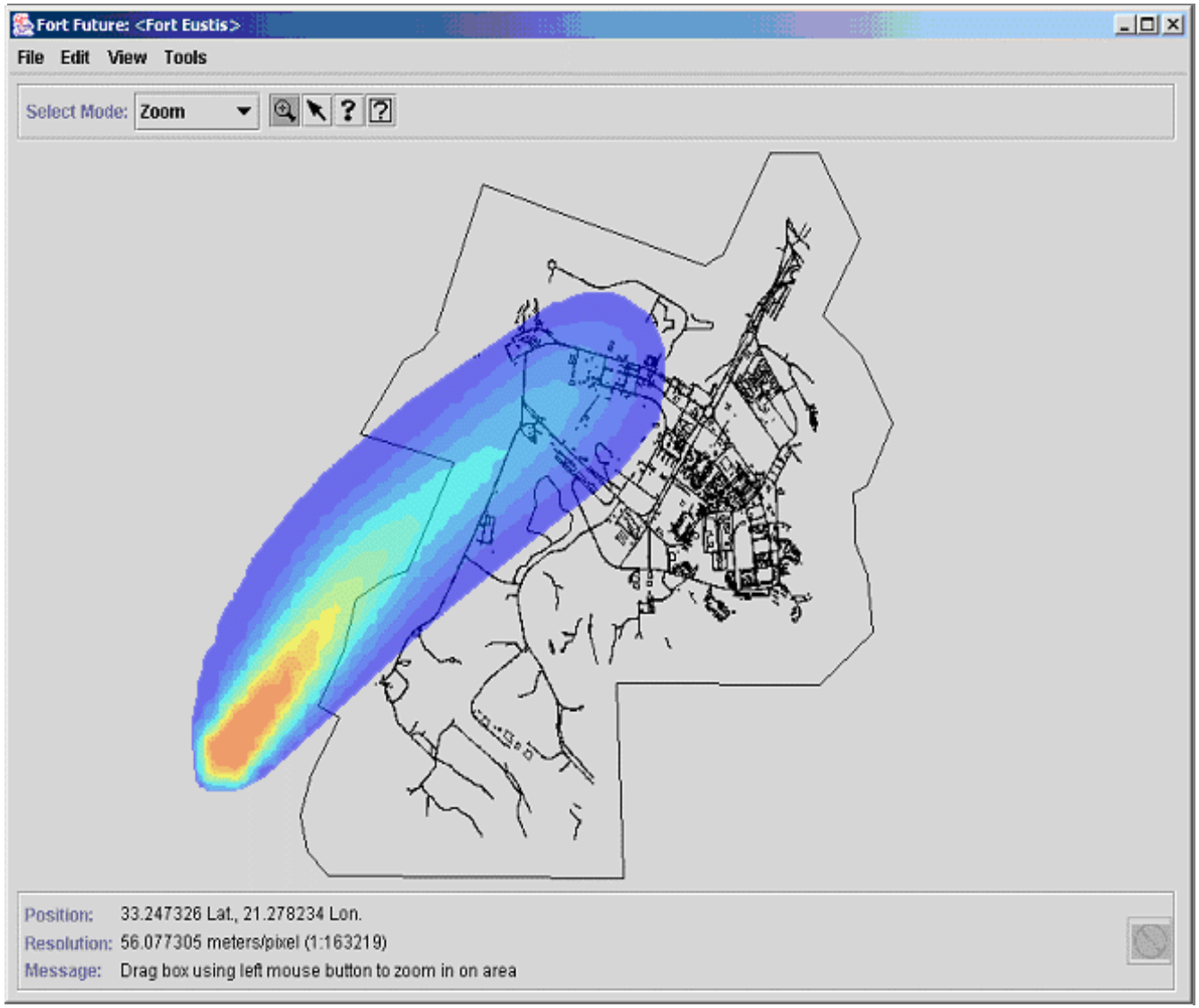
Potential Conflicts: Noise Generation and Urban Growth

- Impact on current/planned training
  - Noise vs Community Growth



http://www.cecer.army.mil/KD/SERM/index.cfm?chn_id=1063

CBRN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Resolution: 56.077305 meters/pixel (1:163219)
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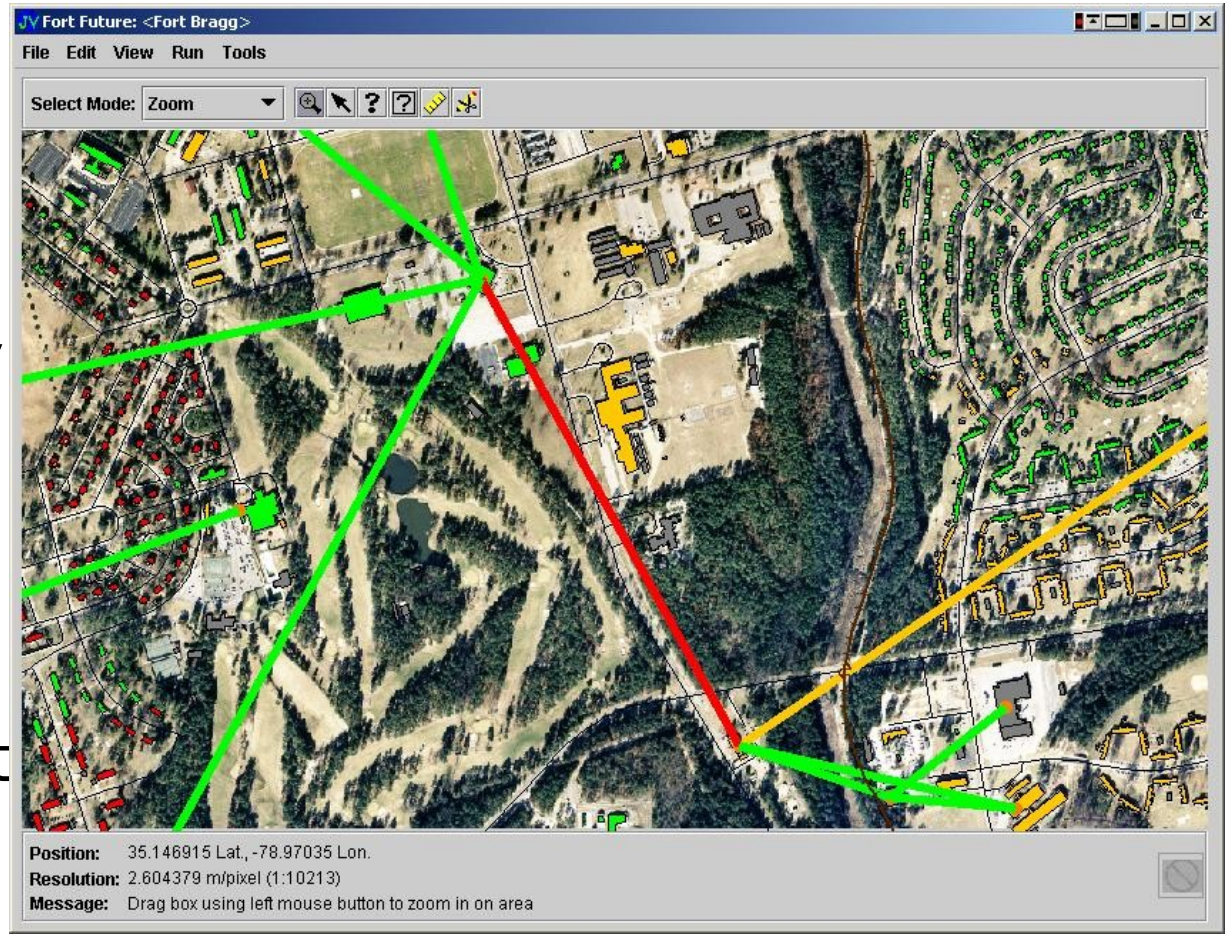
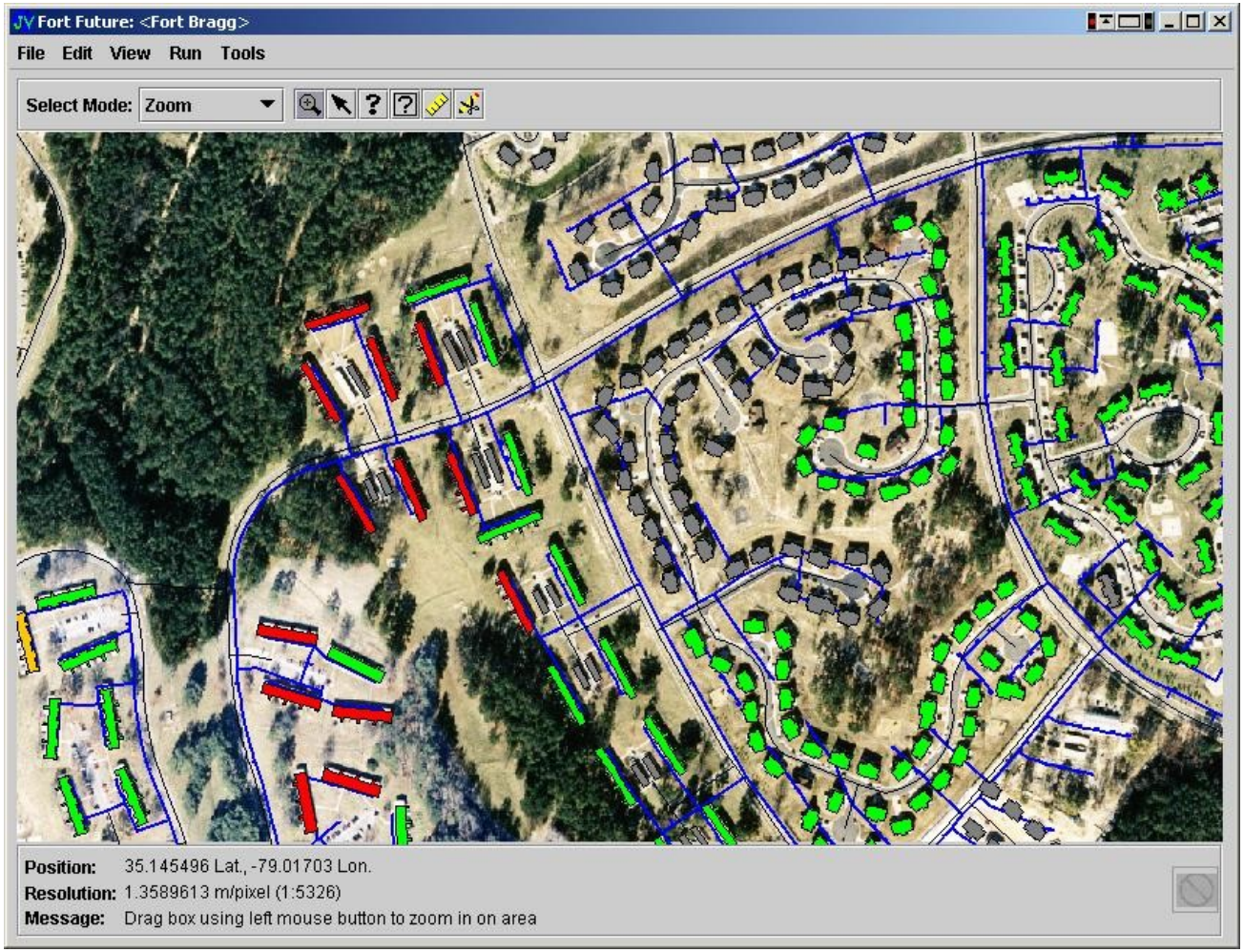
Electrical Power Simulation

- Capacity
- Vulnerability
- Interacts with other simulations in Virtual Environment


Fort Future: <Fort Bragg>
File Edit View Run Tools
Select Mode: Zoom
Position: 35.146915 Lat., -78.97035 Lon.
Resolution: 2.604379 m/pixel (1:10213)
Message: Drag box using left mouse button to zoom in on area

Water System Simulation

- Capacity
- Vulnerable to interruption
- Contamination
- Fuel system to follow in FY05


Fort Future: <Fort Bragg>
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Select Mode: Zoom
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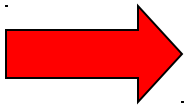
Resolution: 1.3589613 m/pixel (1:5326)
Message: Drag box using left mouse button to zoom in on area

Outline

- Introduction
- Sustainable Installations
- Fort Future Scope
- Fort Future Planning Study Walkthrough
- Sustainable Design Using SPiRiT



Why Sustainable Design

- Buildings consume 30-40% of our nation's energy and 60% of our electricity
- About 1/4 of the increase in CO2 in the atmosphere is due to buildings
- Buildings consume 40% of raw stone, gravel, and sand; 25% of virgin wood
- Construction creates 2 - 2.5 pounds of solid waste per square foot -- 30 - 35% of landfill space is building demolition waste

Sustainable Project Rating Tool (SPiRiT)

- Points: 100 Possible.
- Score at least the following number to obtain the indicated rating.
  - **75-100: Platinum**
  - **50-74: Gold**
  - **35-49: Silver**
  - **25-34: Bronze**
- Gold to be minimum expected score in FY06.

- Water Efficiency
- Sustainable Sites
- Energy & Atmosphere
- Materials & Resources
- Indoor Environmental Quality
- Facility Delivery Process
- Current Mission
- Future Mission

ETL 1110-3-491 defines <u>sustainability</u> as ". . . the design, construction, operation and reuse/removal of the built environment (infrastructure as well as buildings) in an environmentally and energy efficient manner. . . . meeting the needs of today without compromising the ability of future generations to meet their needs."

SPiRiT Scoring

Green Results

- **Sustainable Sites: 20**
- **Water Efficiency: 5**
- **Energy and Atmosphere: 28**
- **Materials and Resources: 13**
- **Indoor Environmental Quality: 17**

Life-Cycle Synergy

- **Facility Delivery Process: 7**
- **Current Mission: 6**
- **Future Mission: 4**

- **TOTAL 100**

SPiRiT Rating

- **Points: 100 Possible.**
- **Score at least the following number to obtain the indicated rating:**
  - **75-100: Platinum**
  - **50-74: Gold**
  - **35-49: Silver**
  - **25-34: Bronze**
- **Bronze to be minimu expected score.**
- **Beginning in FY06 Gold is minimum expected score.**

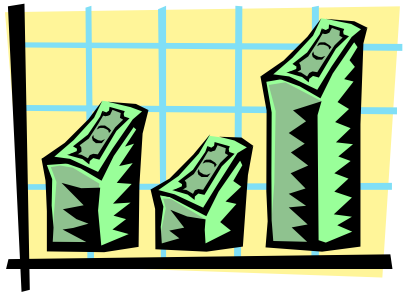
Corps Charrette Guidance

- **DD Form 1391 Preparation Planning Charrette Process** Engineering & Construction (ECB) 2002-16 28 June 02 http://www.hnd.usace.army.mil/techinfo/ECB/ECB%202002-16.pdf

- **Design Charrette Guidance for Army Military Construction (MILCON) Programs** Engineering & Construction (ECB) 2002-13, 6 Sept 2002 http://www.hnd.usace.army.mil/techinfo/ECB/ECB%202002-13%20(Rev.%202).pdf

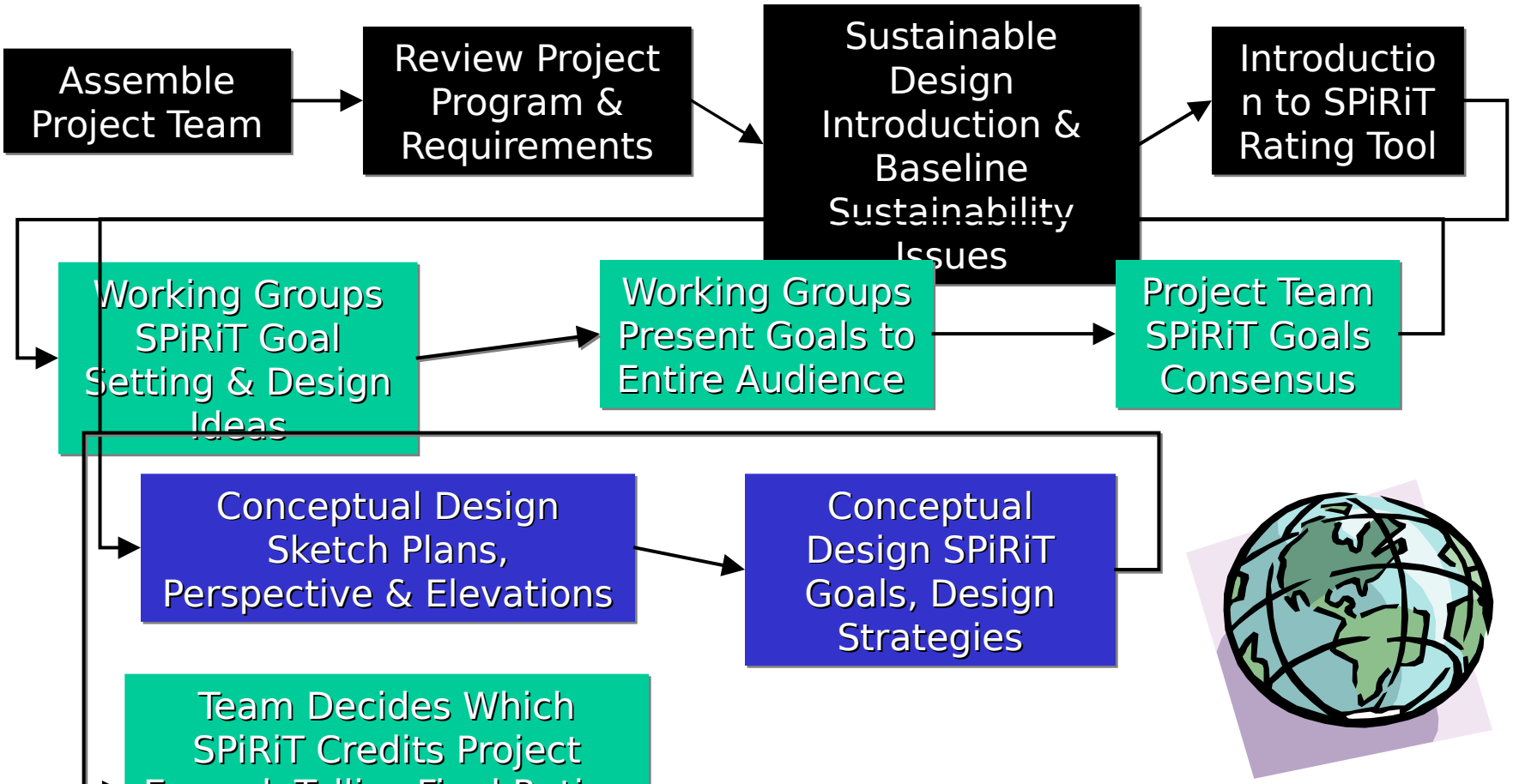
How is SPiRiT Being Used?

- Project Teams hold charrettes to create 1391 (scope and cost estimate to request project funding);
- Once project is approved for design, Project Teams* hold SPiRiT goal-setting & design charrettes (*need member with SDD experience!);
- Teams document SPiRiT related decisions during design (design analysis);
- Teams use DrChecks to review design;
- Project Teams self rate to determine final SPiRiT score;
- If Team doesn't meet SPiRiT target, must notify HQ .

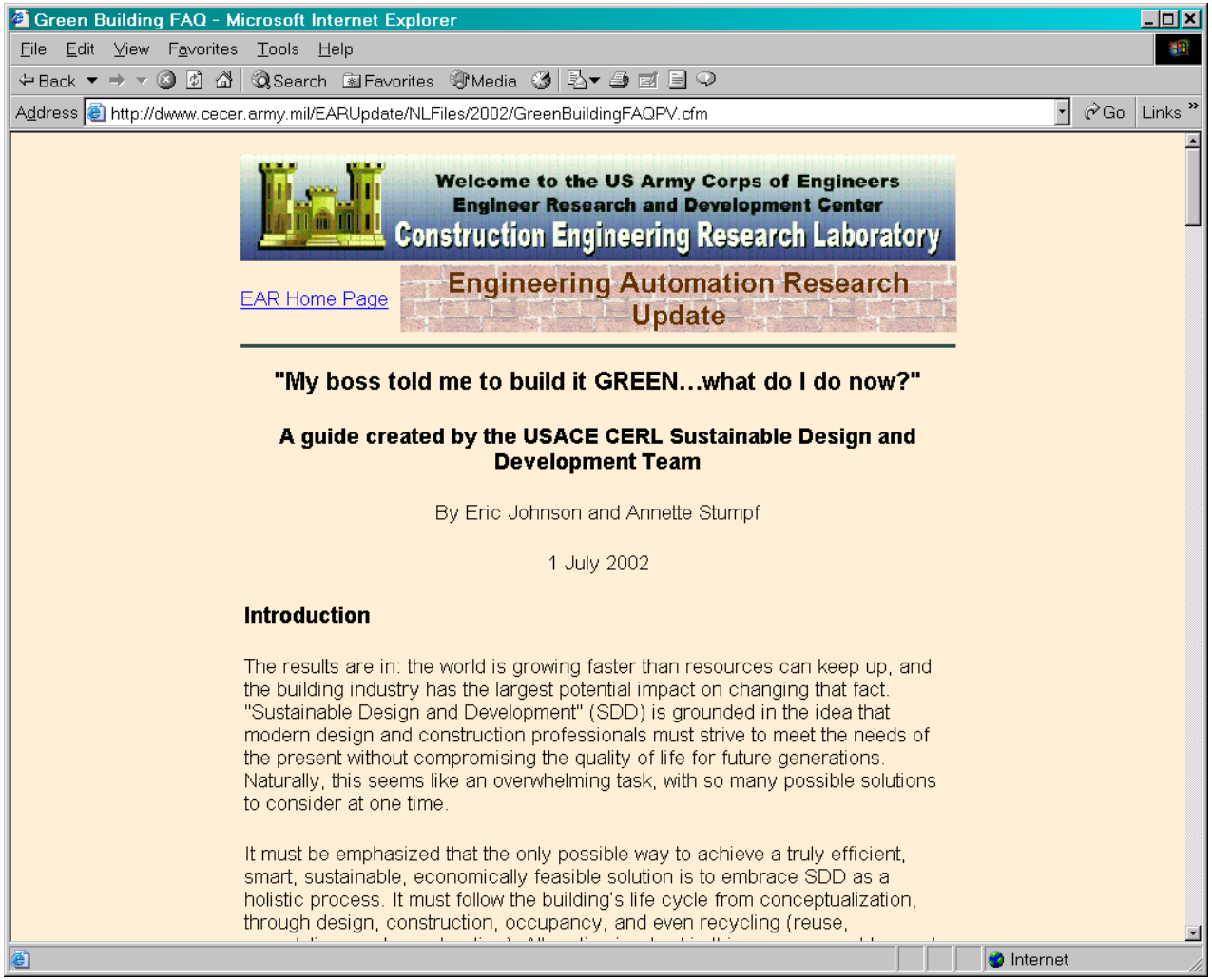


Sustainable Project Charrette Process

Part of 1391 Planning or Design Charrette


Assemble Project Team
Review Project Program & Requirements
Sustainable Design Introduction & Baseline Sustainability Issues
Introductio n to SPiRiT Rating Tool
Working Groups SPiRiT Goal Setting & Design Ideas
Working Groups Present Goals to Entire Audience
Project Team SPiRiT Goals Consensus
Conceptual Design Sketch Plans, Perspective & Elevations
Conceptual Design SPiRiT Goals, Design Strategies
Team Decides Which SPiRiT Credits Project Earned, Tallies Final Rating & Keeps Results in Project File

My boss told me to build it GREEN... what do I do now?


Green Building FAQ - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites Media
Address http://dwww.cecer.army.mil/EARUpdate/NLFiles/2002/GreenBuildingFAQPV.cfm
Go Links
Welcome to the US Army Corps of Engineers
Engineer Research and Development Center
Construction Engineering Research Laboratory
EAR Home Page
Engineering Automation Research Update
"My boss told me to build it GREEN...what do I do now?"
A guide created by the USACE CERL Sustainable Design and Development Team
By Eric Johnson and Annette Stumpf
1 July 2002
Introduction
The results are in: the world is growing faster than resources can keep up, and the building industry has the largest potential impact on changing that fact. "Sustainable Design and Development" (SDD) is grounded in the idea that modern design and construction professionals must strive to meet the needs of the present without compromising the quality of life for future generations. Naturally, this seems like an overwhelming task, with so many possible solutions to consider at one time.
It must be emphasized that the only possible way to achieve a truly efficient, smart, sustainable, economically feasible solution is to embrace SDD as a holistic process. It must follow the building's life cycle from conceptualization, through design, construction, occupancy, and even recycling (reuse,
Internet

http://www.cecer.army.mil/EARUpdate/NLFiles/2002/GreenBuildingFAQ

SPiRiT Divisions & Roles

(See http://www.cecer.army.mil/SustDesign/DivisionsAndRolesv4.xls)

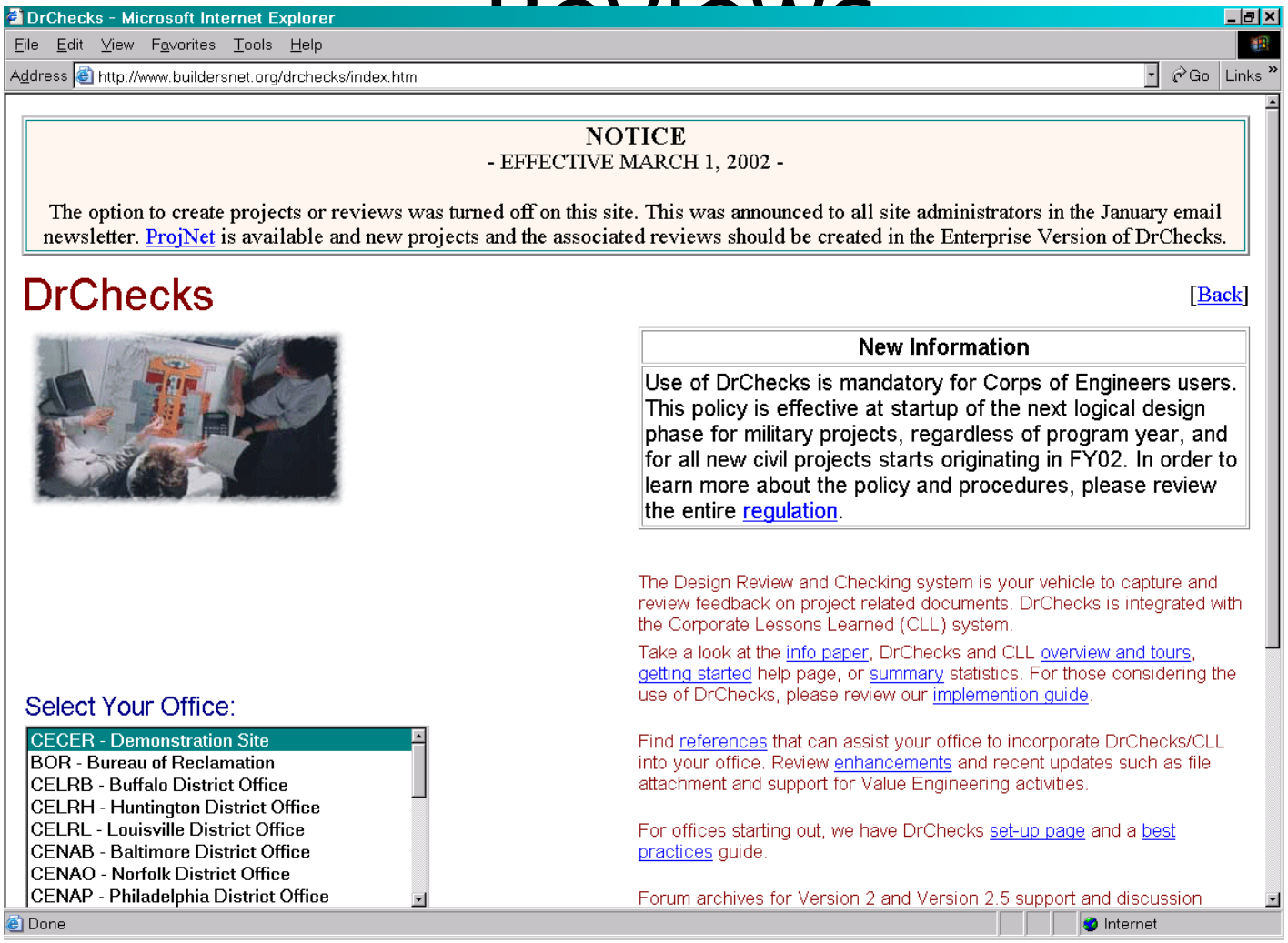
SPiRiT Divisions and Roles	Architect	Landscape Architect	Interior Designer	Civil Engineer	Structural Engineer	Mechanical Engineer	Electrical Engineer	Owner / Operator	Contractor/Builder	Installation Master Planner	Environmental Engineer
1.0 SUSTAINABLE SITES											
Erosion, Sedimentation, and Water Quality Control	C	C		R					C	C	C
Site Selection	C	C		C				R		R	C
Installation/Base Redevelopment	C			C				R		R	
Brownfield Redevelopment				C				R		R	C
Alternative Transportation	C			C				R		C	
Reduced Site Disturbance	R	C		C				C	R	C	C
Stormwater Management	R	C		R	C	C				C	C
Landscape and Exterior Design to Reduce Heat Islands	R	R		C	C			C	C		
Light Pollution Reduction	R		C				R	C	C		
Optimize Site Features	R	R		C				C		C	C
Facility Impact	R							C		C	C
Site Ecology		R						C		C	R
2.0 WATER EFFICIENCY											
Water Efficient Landscaping	C	R		C			C	C			C
Innovative Wastewater Technologies	C	C		C		R		C			C
Water Use Reduction	R					R		C		C	C
3.0 ENERGY AND ATMOSPHERE											
Fundamental Building Systems Commissioning	R		C		C	C	C	C	C		
Minimum Energy Performance	R		C			C	R	C			
CFC Reduction in HVAC&R Equipment	R					C					
Optimize Energy Performance	R		C			R	R	C			
Renewable Energy	C						R	C		C	C
Additional Commissioning	R			C		C	C	C	C		
Measurement and Verification	C					R	R	C	C		
Green Power							C	R		C	
Distributed Generation	C						R	C		C	C

R = Responsible Discipline, C = Discipline who needs to Collaborate with R to make good design decisions

SPiRiT Point 'Tracking'

FACILITY SUMMARY POINTS		Max. Points	TEAM SCORING 1	2	3	Notes	Action	Status	Responsibility	Points Status
2.0	**Water Efficiency (W)**	**5**	**4**	**3**	**2**					
2.C1	Water Efficient Landscaping	2	2	1	2					
	Use high efficiency irrigation technology, OR, use captured rain or recycled site water to reduce potable water consumption for irrigation by 50% over conventional means. (1)						Not cost effective	COMPLETE	KZF|BWSC & DSCC	0
	Use only captured rain or recycled site water for an additional 50% reduction (100% total reduction) of potable water for site irrigation needs, OR, do not install permanent landscape irrigation systems. (1)						No permanent landscape irrigation is to be installed.	COMPLETE	KZF|BWSC	1
2.C2	Innovative Wastewater Technologies	1	0	0	0					0
	Reduce the use of municipally provided potable water for building sewage conveyance by a minimum of 50%, OR, treat 100% of wastewater on site to tertiary standards.						Not attainable.	COMPLETE	KZF|BWSC	
2.C3	Water Use Reduction	2	2	2	0					
	Employ strategies that in aggregate use 20% less water than the water use baseline calculated for the building (not including irrigation) after meeting Energy Policy Act (EPACT) of 1992 fixture performance requirements. (1)						Final specifications Section 15400A, Plumbing, General Purpose, will include fixtures with flow restrictors to achieve a 30% reduction in water use.	ONGOING	KZF|BWSC	1
	Exceed the potable water use reduction by an additional 10% (30% total efficiency increase). (1)						Final specifications Section 15400A, Plumbing, General Purpose, will include fixtures with flow restrictors to achieve a 30% reduction in water use.	ONGOING	KZF|BWSC	1
3.0	**Energy and Atmosphere (E)**	**28**	**12**	**13**	**14**					
3.R1	Fundamental Building Systems Commissioning	Req'd.	-	-	-					
	Implement all of the following fundamental best practice commissioning procedures.									
	Engage a commissioning authority.						DSCC to answer.	TBD	DSCC	

Use DrChecks for SDD Reviews

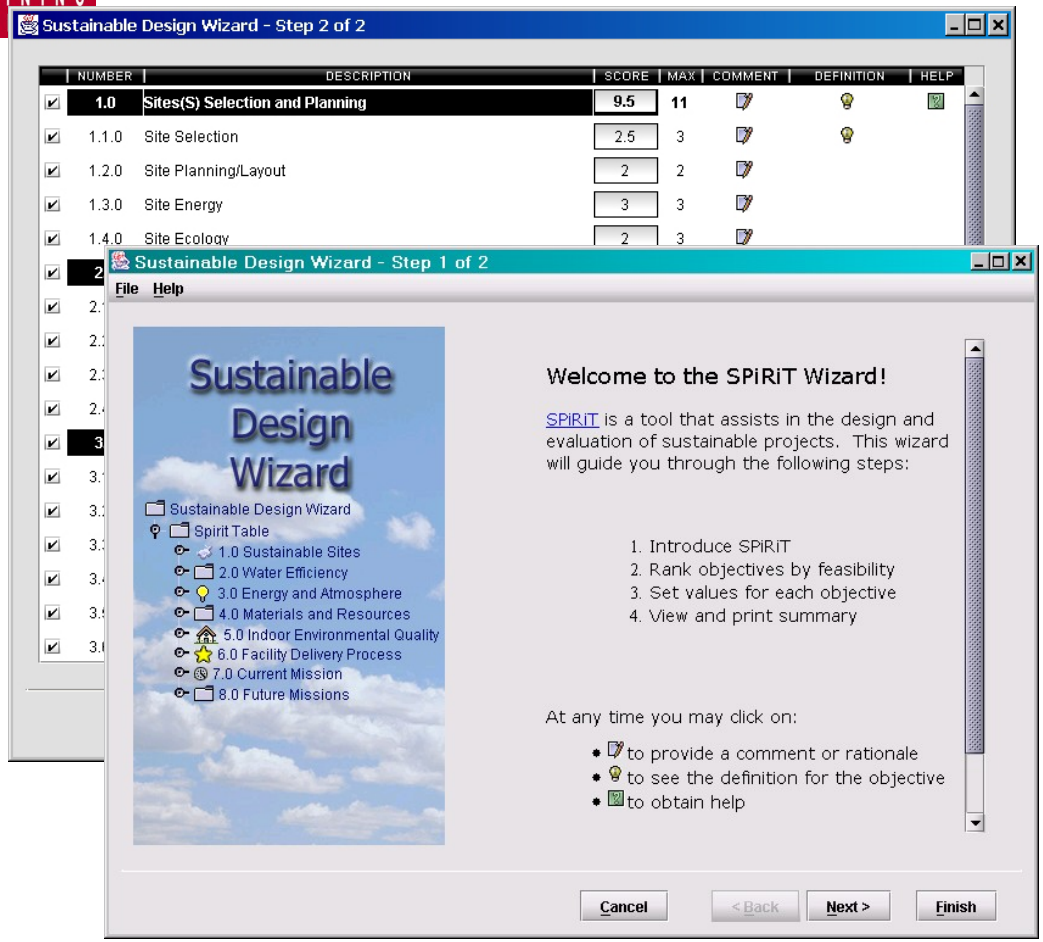

DrChecks - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Address http://www.buildersnet.org/drchecks/index.htm
Go Links
NOTICE
- EFFECTIVE MARCH 1, 2002 -
The option to create projects or reviews was turned off on this site. This was announced to all site administrators in the January email newsletter. ProjNet is available and new projects and the associated reviews should be created in the Enterprise Version of DrChecks.
DrChecks
[Back]
New Information
Use of DrChecks is mandatory for Corps of Engineers users. This policy is effective at startup of the next logical design phase for military projects, regardless of program year, and for all new civil projects starts originating in FY02. In order to learn more about the policy and procedures, please review the entire regulation.
The Design Review and Checking system is your vehicle to capture and review feedback on project related documents. DrChecks is integrated with the Corporate Lessons Learned (CLL) system.
Take a look at the info paper, DrChecks and CLL overview and tours, getting started help page, or summary statistics. For those considering the use of DrChecks, please review our implemention guide.
Find references that can assist your office to incorporate DrChecks/CLL into your office. Review enhancements and recent updates such as file attachment and support for Value Engineering activities.
For offices starting out, we have DrChecks set-up page and a best practices guide.
Forum archives for Version 2 and Version 2.5 support and discussion
Select Your Office:
CECER - Demonstration Site
BOR - Bureau of Reclamation
CELRB - Buffalo District Office
CELRH - Huntington District Office
CELRL - Louisville District Office
CENAB - Baltimore District Office
CENAO - Norfolk District Office
CENAP - Philadelphia District Office
Done
Internet

http://www.buildersnet.org/

Hints for Success:

- Consider Sustainability during Master Planning, 1391s, design, construction, O&M and demolition/reuse;
- SD&D is a collaborative multidisciplinary team effort;
- Planning and Design Charrettes focus team on sustainable goals so project can meet SPiRiT rating;
- Select recycled & environmentally preferable materials;
- Construction practices must care for the environment and minimize construction waste;
- This is a process change, requires patience, flexibility and willingness to learn new patterns!
- Successful projects ALL have a sustainable “zealot” or “SPiRiTual Leader”!

Sustainable Designer's Aid

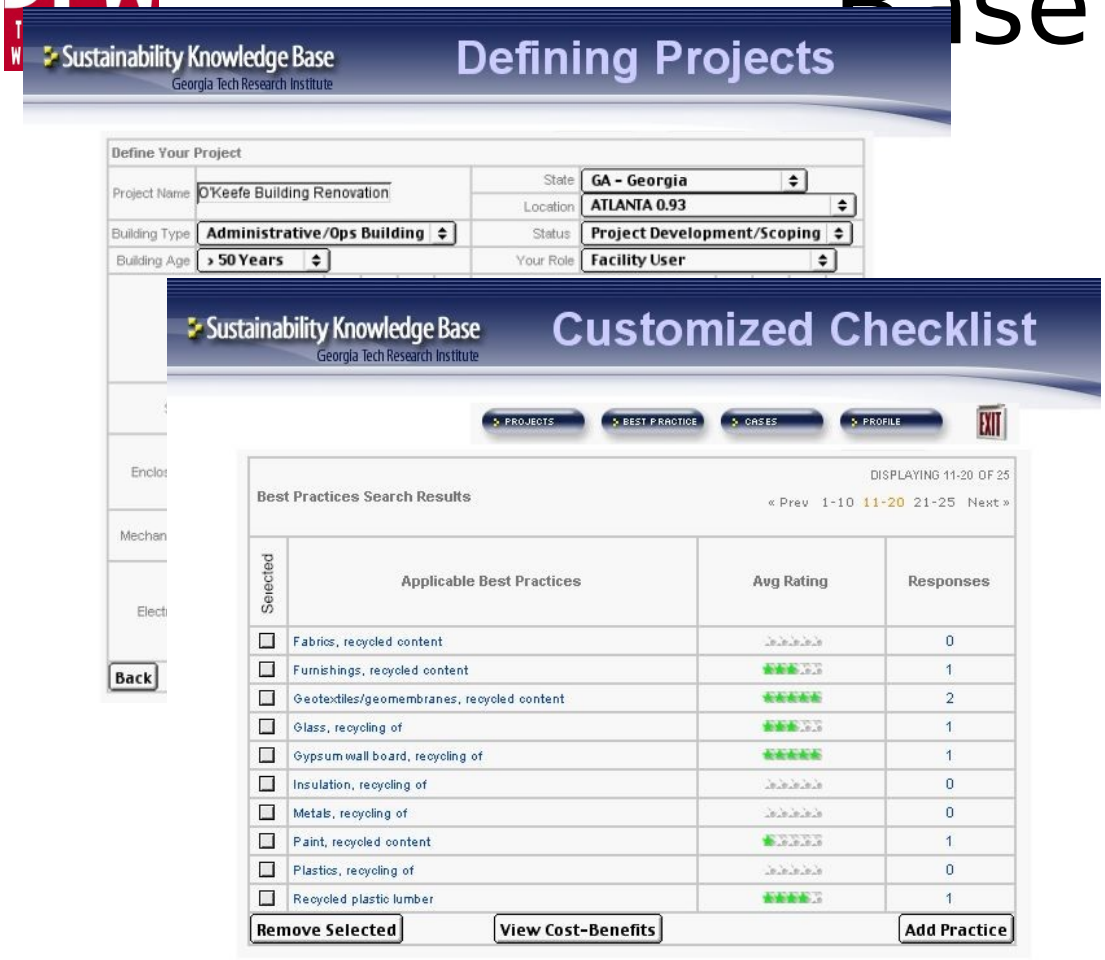

Sustainable Design Wizard - Step 2 of 2
NUMBER
DESCRIPTION
SCORE
MAX
COMMENT
DEFINITION
HELP
1.0 Sites(S) Selection and Planning 9.5 11
1.1.0 Site Selection 2.5 3
1.2.0 Site Planning/Layout 2 2
1.3.0 Site Energy 3 3
1.4.0 Site Ecology 2 3
Sustainable Design Wizard - Step 1 of 2
File Help
Sustainable Design Wizard
Sustainable Design Wizard
Spirit Table
1.0 Sustainable Sites
2.0 Water Efficiency
3.0 Energy and Atmosphere
4.0 Materials and Resources
5.0 Indoor Environmental Quality
6.0 Facility Delivery Process
7.0 Current Mission
8.0 Future Missions
Welcome to the SPiRiT Wizard!
SPiRiT is a tool that assists in the design and evaluation of sustainable projects. This wizard will guide you through the following steps:
1. Introduce SPiRiT
2. Rank objectives by feasibility
3. Set values for each objective
4. View and print summary
At any time you may click on:
to provide a comment or rationale
to see the definition for the objective
to obtain help
Cancel
< Back
Next >
Finish

What and When:

- Link to SPiRiT
- Provide process for using SPiRiT.
- Record and tract rationale
- Generates SPiRiT rating
- Reuse previous strategies for subsequent projects
- Prototype (Apr 02)
- Sustainable Designers Aid, r1 (Dec 03)

- **http://www.cecer.army.mil/SustDesign**
- **http://bc.cecer.army.mil/bcdev/wizards/SDA/spiritweb/index.htm**

Sustainability Knowledge Base

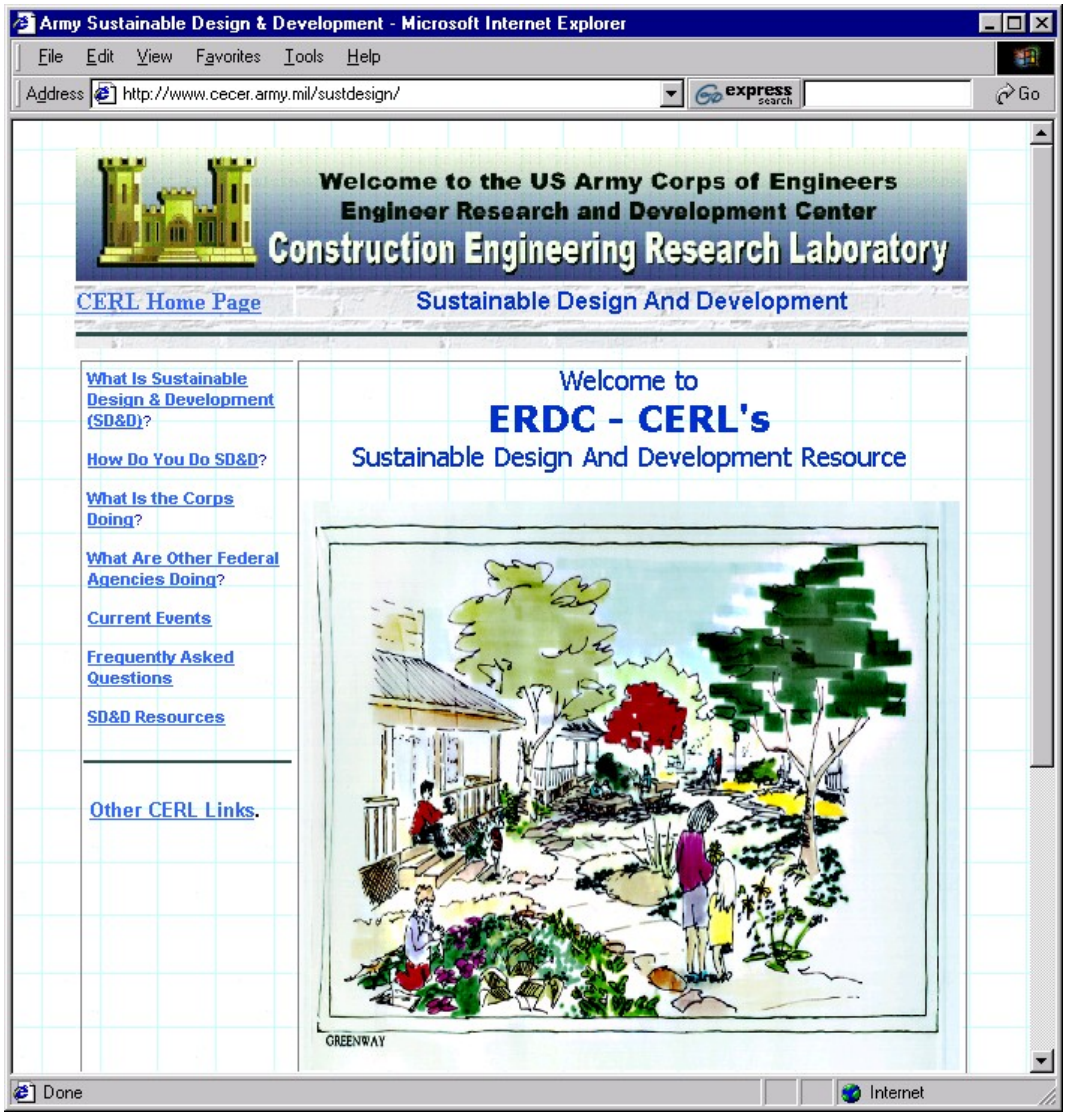


What and When:

- O&M/Rehab Projects
- Creates customized checklists by project type, phase, and job function
- Helps users identify and prioritize relevant actions
- Allows users to quickly share experiences with sustainable technologies
- Includes over 200 sustainability best practices linked to case studies in Region IV
- Prototype released Aug 03

http://www.sustainablefacilities.org

Where do I find the information I need?



http://www.cecer.army.mil/SustDesign

Army USGBC Membership

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>Credit Interpretations | >Logout | >Update Your Profile | >Your Projects

MEET THE USGBC | JOIN | LEED | RESOURCES | NEWS | EVENTS | MEMBERS | HOME

account maintenance | resources | members forum | chapters | member directory

USGBC Member Services

Welcome to the members-only section of the USGBC Web site. Our goal is to provide you with the resources you need to advance green building in the marketplace and within your company or organization. In this section you will find a variety of tools:

- Network through the USGBC membership directory
- Update your membership account
- Change or remember your password
- Download the USGBC member logo
- View LEED credit rulings and comments
- Keep up to date on committee activities
- Join committee listservs
- Access green building case studies and articles

Get the most out of your membership through this members-only site. And contribute to the knowledge of your fellow members by sharing your articles on green building. This is your gateway to the green building community.

USGBC members participate in a design charrette on the LEED-platinum rated Chesapeake Bay Foundation headquarters in Bay Ridge, MD.

Welcome to the members-only section of the USGBC Web sit

Army Password: F6638ITJKITARAO

Http://www.usgbc.org

Points of Contact

Sustainable Design & Development:

- U. S. Army Corps of Engineer SDD POC - Harry Goradia, CECW-ET, 202/761-7170, harry.goradia@usace.army.mil
- U. S. Army ACSIM POC - John Scharl, DAIM-FDF, 703/428-7614 , Email John.Scharl@hqda.army.mil
- Guidance for Sustainable Building Delivery - Richard L. Schneider, CEERD-CF-N, 217/373-6752, richard.l.schneider@erdc.usace.army.mil
- Sustainable Designer's Aid - Annette L. Stumpf, CEERD-CF-N, 217/373-7542, annette.l.stumpf@ erdc.usace.army.mil
- Sustainability Knowledge Base - Annie R. Pearce, Georgia Tech Research Institute, 404/894-8089, annie.pearce@gtri.gatech.edu
- **SPiRiT**: Call Annette or Rich

Contact Information

Fort Future Site: http://ff.cecer.army.mil
Facility Composer Site: http://bc.cecer.army.mil/

Mike Case, FF Special Project Officer
(217) 373-7259
Michael.P.Case@erdc.usace.army.mil

Don Hicks, FF Project Manager
(217) 373-6712
Donald.K.Hicks@erdc.usace.army.mil

Construction Engineering Research Lab
P.O. Box 9005, Champaign , Illinois 61826

Implementing Installation Sustainability –

Accomplishments at 4 major installations

Fort Bragg
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Home of the Airborne & Special Operations

4. Identify & Execute Early Successes

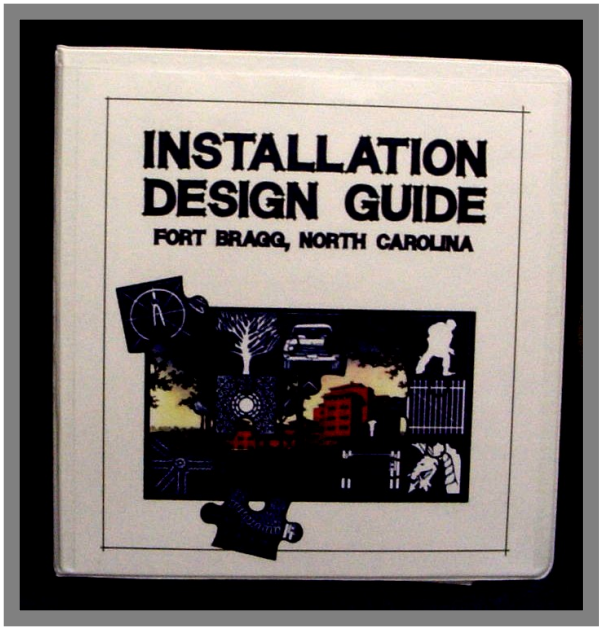
"…Vision doesn't wait for something bad to happen, it pursues something desirable…It doesn't stave off defeat, it opens the way to success."

-Daniel Quinn

Early Successes

Sustainable Design Team:

- Updated the Installation Design Guide to reflect Sustainable Design Standards.
  - Completed Sept 2003.
- Demonstration project using Sustainable Design Standards for storm water and pervious pavement management in FY 2002-03.
  - Design-bid-build… construction to be awarded NLT 30 Sept 03



Early Successes

- Sustainable Design Team:
  - SPiRiT Training and Workshop for Engineer Project Managers;
  - Inclusion of SPiRiT requirements into all RFP's beginning in FY03;
  - First "Gold" facility under construction; 36,000+ square foot Golden Knights facility

Construction Site for the new "Golden" Knights Parachute Team.